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ABSTRACT

This paper describes a policy exercise on education and the new economy held in Aspen, Colorado, in June 1997. The exercise was designed to help the National Center for Research on Vocational Education understand the development of education and training in the near future. The exercise took advantage of expertise in social gaming developed at RAND, one of the Center's host sites. Participants included about two dozen education researchers and decision makers from across the United States. The paper describes the motivation for the policy exercise, its basis in earlier exercises, its structure and outcomes, and lessons for educational policy and further gaming. The discussion on system design focused on the improvement of standards, better coordination between the academic and vocational education systems and between human-resource-development systems and the private sector, and the use of performance-based criteria for teacher development. The federal government is recommended to encourage the establishment of standards, generate support for standards, and identify ways to coordinate work-force development. Appendices contain exercise materials and information about the allocation-outcomes model. (LMI)



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RAND

# *Education and the New Economy*
## *A Policy Planning Exercise*

*Cathleen Stasz, James Chiesa, William L. Schwabe*

*DRU-1728-NCRVE/UCB*

*September 1997*

*Prepared for the Office of Vocational and Adult Education, U.S. Department of Education*

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## PREFACE

This document reports in some detail on a policy exercise on education and the new economy held in Aspen, Colorado, June 23-25, 1997. The exercise was intended to help the National Center for Research on Vocational Education understand the development of education and training in the near future. The exercise took advantage of expertise in social gaming developed at RAND, one of the Center's host sites. Participants included about two dozen education researchers and decisionmakers from across the United States. Here, we report on the motivation for the exercise, its basis in earlier exercises, its structure and outcomes, and lessons for educational policy and further gaming. A shorter report summarizes the policy implications alone.

The National Center for Research on Vocational Education (NCRVE) was established by Congress in 1978, in accordance with the Carl D. Perkins Vocational Education Act. The Center operates under the authority of the U.S. Department of Education's Office of Vocational and Adult Education and currently consists of a consortium of institutions with headquarters at the University of California, Berkeley. In addition to Berkeley, the consortium includes RAND, the University of Minnesota, the University of Illinois, Teachers College at Columbia University, Virginia Polytechnic Institute and State University, the University of Wisconsin, and MPR Associates, Berkeley, California. The Center's objectives are

- to rethink what vocational education should be and how it can best be delivered,
- to integrate theory and practice in vocational education, and
- to help vocational programs anticipate and quickly respond to changes in the economy and in educational needs.

The policy planning exercise was conducted by RAND, through its Institute on Education and Training.

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## SUMMARY

Education is asked to help society overcome a number of economic challenges, such as the perceived need for a workforce with different skills and the unequal distribution of talent and wages across the population. During the 1990s policymakers have become increasingly attentive to the relationship between education and economic health and how to best ensure that the United States maintains its economic position relative to other nations. Analyzing this relationship in a manner helpful to policy formulation is a difficult and often controversial task. The fragmented and decentralized nature of our education and training system only adds to the difficulty.

However, while policymakers and scholars may argue over the extent to which our education and training system fails to prepare individuals to participate fully in the new economy, few disagree that improvements are needed. But the locus of responsibility for effecting these improvements is also shifting. In particular, the current political climate favors reducing the federal role and placing more responsibility and fiscal control in the hands of state governments. It is thus safe to say that America's education and training policy is in flux. The continuing debates present an opportunity, however, to explore ways in which education might meet the challenge of a new economy.

To take advantage of that opportunity, the National Center for Research on Vocational Education sponsored a policy exercise at Aspen, Colorado, on June 23-25, 1997. For assistance in designing the exercise, the Center turned to RAND, one of its host sites, which had conducted several such exercises. The RAND policy exercises had their origin in "war games" conducted for the Department of Defense, games in which military officers played both sides in computer-simulated battles to gain insight into enemy thinking and successful strategy and tactics. RAND's first post-Cold War exercise brought together government officials and academics in a one-sided "game" to devise drug control strategies and examine their potential consequences in a hypothetical city. Other exercises focused on violence control.

The Policy Planning Exercise on Education and the New Economy assembled education researchers, federal and state vocational-education officials, leaders of nonprofit organizations with an interest in this area, and representatives of the business community. Participants were divided into four panels, each constituted to encompass a mix of perspectives. The exercise started off with a dialogue in which participants got to know one another and the experiences and views they brought to the table. The dialogue was loosely structured around a set of questions addressing the relationships among education, work, and the economy and the objectives of education and the challenges facing it today.

In the second day of the exercise, panelists participated in a two-move "seminar game" in which they took on the roles of advisors to the governor of a hypothetical state. Panelists were briefed on the demographics, economy, and educational systems within their "states." In move 1, participants were given a January 1998 scenario in which federal funds for various education and training programs had been combined (and augmented) into a block grant that their state would now have to allocate. As advisors to the governor, they would have to recommend an allocation. At the end of this move (and of the next two sessions), participants gathered in plenary session to give each panel an opportunity to present its recommendations to the others and to allow the entire group a chance to react.

Move 2 was set in 2002. Panelists were given some updated information on educational attainment, employment levels, and earnings within their state and asked to suggest a redesign of the state's education and training system. Specifically, they were asked to prioritize a list of reforms (e.g., inclusion of work-based education or applied pedagogy, adoption of standards and certifications) and, if they wished, extend the list.

On the final day, panelists were brought back to the present to apply what they'd said and heard in previous sessions to federal policy in the very near term. Participants were requested to draw up their recommendations in the form of a presentation to the U.S. Secretaries of Education and Labor. The exercise concluded with a plenary session in

which participants drew overall inferences from what had been discussed over the previous two days and commented on aspects of exercise design.

While the tasks assigned to participants provided a framework to guide discussion, the exercise structure was loose enough to allow panelists to break out on their own, which they did. For instance, in move 1, the panels found it helpful in allocating monies to first make the sort of broad review of goals and strategies that had originally been planned for move 2. The result of these deliberations was a tendency to redirect the hypothesized federal funds to K-12 education in preference to adult or vocational education, although panelists often cited specific objectives they hoped to achieve with that new K-12 money. Panelists were also unanimous in retaining funding for Pell-like grants; indeed, there was considerable sentiment for an education and training system in which funds followed individuals rather than institutions. Interestingly, while in desigining a system, panelists paid some attention to the rather disparate challenges affecting their hypothetical states, panel recommendations were more like than different. This suggests that the participants viewed the most important challenges facing workforce education and training as national in scope and character.

If there was a central theme to the discussions on system design, it was the importance placed on standards. Exercise participants believed it important to establish standards both for what ought to be learned in school and for what needs to be known to function well in the full range of jobs available. There appeared to be a consensus that achievement of standard-level competence is best assured through assessments that have stakes. And it was pointed out that statewide (or nationwide) assessments could serve as a way of holding school districts accountable for equity of educational effort. Thus, inner-city parents could be assured that, when their children graduated with A's, they would be viewed by potential employers as competitive with suburban children graduating with A's.

Along with standards and accountability, the most important system design desideratum emerging from the exercise was, not surprisingly, coordination: better coordination between the academic and vocational

education systems, and better coordination between such human resource development systems and the private sector in matching individuals to employer needs. There was also considerable sentiment for making true lifelong learning available. This grew out of a recognition that the economy was now changing rapidly enough that many workers would have to be retrained in new skills at some point in their careers. Two of the four panels emphasized the need for a more individually tuned system, one which persons could easily leave and return to, possibly as early as what is now grade 11, drawing on individual accounts, perhaps cofunded by the individuals themselves. Finally, panelists recognized that none of what they recommended could be achieved without the training or retraining of teachers to implement it. A favored approach to the professional development of teachers was to impose the same kind of performance-based certification envisioned for other positions in the new economy.

Participants were generally cautious in what they expected of the federal government. They believed the Secretary of Education should use his "bully pulpit" to help frame issues: He might familiarize Americans with the different challenges a globalizing economy poses for the U.S. education and training systems, the need for students to meet higher standards, and the likelihood that some will fail. There was little sympathy for mandates from the federal government, but participants did feel that federal officials could work with states to achieve several objectives. They could encourage the establishment of standards, help recruit various stakeholders to actively support standards, or identify ways to coordinate the activities of institutions involved in workforce development. Panelists seemed to prefer limited investment of federal monies in such activities over large new federally funded programs.

## ACKNOWLEDGMENTS

Many individuals contributed to the policy planning exercise. NCRVE colleagues David Stern, Phyllis Hudecki, Norton Grubb and Gary Hoachlander formed an advisory committee to assist in the design of the exercise. Jack Jennings, Director of the Center on Education Policy also made important design suggestions. Mike Timpane, Phyllis Hudecki, and Gary Hoachlander helped suggest and recruit participants.

Before conducting the exercise in Aspen, we held a rehearsal at RAND. We thank the following individuals for agreeing to participate and for providing very useful feedback: David Stern, Phyllis Hudecki, Gary Hoachlander, Norton Grubb, Georges Vernez, Brian Stecher, Dominic Brewer, Susan Gates, Brent Keltner, and Tessa Kaganoff.

Organization and logistics for the event were superbly guided by Diane Schoeff at RAND, assisted by Tim Vernier and Linda Daly. During the exercise itself, staff from NCRVE, RAND, and OVAE had particular roles. David Stern, Phyllis Hudecki, Dominic Brewer, and Cathy Stasz acted as team facilitators; Charles Hopkins, Carolyn Maddy-Bernstein, Pariece Wilkins and Jackie Friederich as recorders. Bill Schwabe and Richard Darilek directed the exercise, and Jim Chiesa was roving rapporteur.

Most importantly, we are grateful to the individuals who participated in the policy planning exercise. Since this event was an atypical process for deliberating on social policy, the participants essentially took a chance and accepted a "blind date." Over the two days of the exercise, they were asked to accept constraints, to suspend judgement--even to leave politics aside. Their full, enthusiastic participation resulted in what we believe was a successful exercise that yielded many useful insights and ideas about how education might meet the challenge of the new economy. They are thus the true authors of this document.

# 1. INTRODUCTION

Education is asked to help society overcome a number of economic challenges. These include the perceived need for a workforce with different skills, the unequal distribution of talent and wages across the population, and a more fluid employment environment where occupational boundaries are changing and more jobs are temporary. During the 1990s policymakers have become increasingly attentive to changes in the economy and the impact of those changes on different facets of U.S. society. Chief among their concerns is the relationship between education and economic health and how to best ensure that the United States maintains its economic position relative to other nations. Anxiety about international competition has directed attention to the quality of our education and training system and has been a central motivation for recent reforms to that system. Like other complex issues, sorting out the relationships between education and the economy that policy can affect is a difficult and often controversial task. The fragmented and decentralized nature of our education and training system only adds to the difficulty.

While policymakers and scholars may argue over the extent to which our education and training system fails to prepare individuals to participate fully in the new economy, few disagree that improvements are needed. But, while researchers sort out the exact nature of the changes and how to best alter education and training practices to meet new demands, the locus of responsibility for effecting change is also shifting. In particular, the current political climate favors reducing the federal role and placing more responsibility and fiscal control in the hands of state governments. This can be seen in proposed federal legislation to allocate federal education and training dollars to states in the form of block grants. It can also be seen in Congress' failure to reauthorize federal vocational education legislation in 1996.

At this point in time, it is safe to say that America's education and training policy is in flux. The continuing debates present an opportunity, however, to explore ways in which education might meet the

challenge of a new economy. As one step in that direction, the National Center for Research in Vocational Education decided to conduct a policy planning exercise. This document reports on the design and outcomes of that exercise, conducted with a diverse group of nationally recognized scholars, state and federal government officials, leaders of nonprofit organizations, and representatives of the business community. We begin with a brief description of the nature and purpose of policy planning exercises (Chapter 2) and follow that with a detailed description of the structure of the "Education and the New Economy" exercise (Chapter 3). We report the exercise output--the results of the deliberations of the various panels of participants (Chapter 4) and provide a synthesis of some of the key points made during the discussions (Chapter 5). We conclude with criticisms and suggestions for improvement made by participants at the end of the exercise (Chapter 6).

## 2. POLICY PLANNING EXERCISES

A "policy planning exercise," as we are using the term here, is a workshop intended to allow those involved in formulating public policy an opportunity to consider the implications of various strategies in an interactive environment. The interactions include those among the participants as well as others between the participants and analysts who can shed light on policy effects. Participants are promised that they will not be quoted, which allows them to explore different positions without fear of sending public signals that could be misinterpreted. Participants are recruited with the objective of ensuring that a variety of perspectives on the issue at hand are represented.

Policy planning exercises are structured around a "game" in which participants imagine that they are faced with a policy problem to be solved at some point in the future, possibly in some hypothetical state or city. They are furnished with details of the scenario and are then asked to suggest some strategy or line of action to be taken. To ensure that the players develop a deeper understanding of perspectives other than their own, they are typically asked to assume roles different from those they play in real life. The strategy suggested by the players is fed into an analytic model, which predicts the outcome at some future point. Play then moves to that point, and participants are asked to make another "move."

Major policy issues are often politically charged, and policy planning exercises can take either of two approaches in response to this. Some exercises deal overtly with politics. By bringing persons with different politics together in a role-playing game, they seek to promote dialogue and understanding. The objective is to return participants to the "real world" with a stronger motivation to seek common ground and make progress against the challenges facing them. In other exercises, though political fallout can be among the effects discussed, participants are invited to escape from the political pressures they constantly face. They are asked to consider policies on the basis of such standard measures of merit as effectiveness,

efficiency, and equity. In playing roles in such games, players still have the opportunity to see things from a different perspective. Here, however, they may need to search more seriously for the measure of merit of primary concern to the role rather than assuming a certain political orientation.

In serving the overall goals and objectives discussed above, policy planning exercises accomplish a number of things. They pool the knowledge of experts, draw out divided opinion, reveal errors or omissions in concept, identify the values or measures of merit that people care about, and suggest questions or hypotheses for further study. They allow participants to examine the feasibility of a concept, dry-run the process of winning approval for a policy, or test strategies for long-term consequences. They thus permit participants to learn things that they could not learn on their own--or, for that matter, with individuals from their own organization--no matter how vigorous their analysis.

What policy planning exercises do not achieve, despite the presence of an analytic model, is a solution to the problems faced. They do not yield reliable, rigorously validated forecasts or predictions of consequences. They achieve their goal of furthering public policymaking by promoting understanding of a policy problem, of the *potential* effects of policy alternatives, and of the positions of others involved in policy formulation.

## 3. EXERCISE STRUCTURE

The structure of the Policy Planning Exercise on Education and the New Economy followed that of other recent exercises conducted by RAND. It began with a dialogue on issues and continued with a two-move seminar game. In the game, the first move addressed current problems in a near-future context and the second move addressed longer-term challenges encountered after the passage of several years of game time. The exercise concluded with a "back from the future" session on federal policy and a final plenary session for summing up of lessons learned and critique of game design. In this chapter we discuss the details of this structure as it applied to the current exercise. A full set of the game materials provided to the participants is given as Appendix A.

### THE OPENING DIALOGUE

The exercise began with assignment of participants to one of four groups. Each group consisted of five or six persons chosen to provide diverse perspectives, plus a facilitator and a recorder. The facilitators were associated with NCRVE or RAND and had all participated in a dry run of the game at RAND. Their purpose was to moderate the opening dialogue and serve as resource persons in subsequent sessions. The recorders, associated with NCRVE or OVAE, took notes to support group recall and documentation of the exercise.

The purpose of the dialogue, held on a Monday evening after dinner, was to give people a chance to get to know one another and air their various perspectives and agendas. Exercise participants represented various stakeholders or actors involved in vocational education, including research organizations, state education agencies, and the private sector (see Table 3.1). While it was anticipated and even desired that participants bring their particular biases to the table, they were assured that they would not be quoted identifiably, so they need not feel that they had to speak for their organizations.

**Table 3.1**

**Policy Planning Exercise on Education and the New Economy: Participants**

**Roger Benjamin**
RAND

**J. R. Cummings**
Texas Education Agency

**Lee Doyle**
Bell South

**Phyllis Eisen**
The Manufacturing Institute

**Curtis Finch**
Virginia Polytechnic Institute
and State University

**John Jennings**
Center on National Education Policy

**Bret Lovejoy**
The American Vocational Association

**David R. Mandel**
MPR Center for Curriculum
and Professional Development

**Anne L. Matthews**
South Carolina Office
of Occupational Education

**James McKenney**
American Association
of Community Colleges

**Patricia McNeil**
Office of Vocational
and Adult Education

**Richard Murnane**
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**Betty Jane Narver**
University of Washington

**Glenda Partee**
American Youth Policy Forum

**L. Allen Phelps**
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**John R. Porter**
National Center on Education
and Economy

**Leo Presley**
Oklahoma Department of Commerce

**Lauren B. Resnick**
University of Pittsburgh

**Ronn E. Robinson**
The Boeing Company

**James Rosenbaum**
Northwestern University

**Marlene Seltzer**
Jobs for the Future

**Janet Washbon**
Wisconsin Technical College
System Board

Game designers offered the facilitators three general questions to help guide the discussion:

- What do you see as the relationships among education, work, and the economy? This was intended to elicit personal experiences with education as a preparation for work, along with views on the changing economy and the responsiveness of education to those changes.
- What are the objectives of education for individuals and for the nation as a whole? A list of possibilities was provided, e.g., national competitiveness and prosperity, poverty reduction, citizenship, and realization of individual potential.
- What are the main challenges facing education today with respect to how the economy is changing? Possibilities suggested included leaving too many people behind, poor integration of academic and job-related education, and inability of high schools to engage young people most in need of education. Participants were also presented with the possibility that the system may be working fine as is.

**THE SEMINAR GAME**

Tuesday was devoted to the two-move seminar game. During this game, each group played the role of a panel of advisors to a state governor. Two mythical states--Montoya and Algonquin--had been invented, though patterned closely after two real states--California and Ohio--with differing educational challenges. The game began with a background briefing on each of the states (more detail was provided in handouts to the participants). Two panels were assigned to each of the states.

Two hours were allowed for the first move and two and a half for the second. For these sessions, group facilitators turned over their moderation role to a leader chosen by the panelists from among themselves. The leader also presented the panel's recommendations to all the participants in plenary sessions held at each move's conclusion.

**Move 1: Allocating Incremental Funds in the Near Future**

For the first move, panelists were asked to assume that it was January 1998 and that Congress had passed a law combining federal funds previously dedicated to Pell and Perkins grants, job training, and adult education into a block grant program. Each state would receive an amount equal to what it received the previous year for those programs, plus incremental funds amounting to about half that total. That increment was to come from funds proposed by the President to fund tax deductions or credits for higher-education expenses. The panels were to recommend to their governors how the grand total ($2.4 billion for Montoya and $770 million for Algonquin) was to be allocated among various education and training programs. The options included those combined into the block grant, along with K-12 education, community colleges, other postsecondary education, and welfare-to-work programs. Panelists were also invited to invent programs of their own.

In keeping with the philosophy and purpose of gaming, panelists were encouraged not to feel constrained by political considerations but to act as advisors charged with serving the best interests of their state. Panelists were free to move the federal money around as they wished in pursuit of any or all of the goals of the block grant: providing up to two years of postsecondary education or training, employing and training adults, training disadvantaged youths, and enhancing adult education and literacy. Panelists were told, however, that future federal funding could be affected by the success of program clients on a variety of measures, e.g., number receiving a high-school diploma, number employed and average earnings, number independent from welfare, number literate.

**Move 2: Designing an Education and Training System for the Long Term**

For the second move, panels were asked to imagine that they had been reconvened after four years. They were given tables of data on the following:

- Participation in high school, college, adult education, job training, and public assistance programs

- Annual number of high-school diplomas awarded and postsecondary degrees awarded, annual number of persons completing advanced training and of trainees placed, employment rate, and per capita earnings.
- Earnings and workforce distribution across educational attainment categories.

These data were given for 1998; for 2002, as projected in 1998 assuming no policy changes; and for 2002, as transpired given the reallocation adopted in Move 1. The 2002 "actual" numbers were calculated by a spreadsheet model (see Appendix B). Though the model was too simplistic and too little was known about some of the parameter values to place much confidence in its output, panelists were ask to accept it as a plausible situation for the purpose of game play in 2002. As the model output did not indicate large changes in any case, panelists were facing much the same set of problems they did four years earlier. In addition, they were reminded that the five-year limit on welfare benefits that was passed in 1996 would be coming into effect for some people.

Panelists were asked to advise the governor as to how the state's education and training system should be redesigned to fulfill several objectives:

- Creating a coherent, high-quality system relevant to the needs of all people.
- Training and sustaining the skilled workforce necessary for a prosperous economy
- Meeting the special needs of the disabled, those on welfare, and others.

They were also to comply with federal legislation and avoid harmful, revolutionary shocks to the system. Panelists were asked to assign priorities to a menu of system design elements, e.g., standards and certificiations, vocational skill training, work-based education, contextualized teaching, integrating academic instruction with occupational education, tracking individuals' progress through the

system. Panelists were free to omit any of the elements on the list or include others of their own choice.

**"BACK FROM THE FUTURE": FEDERAL POLICY NOW**

On Wednesday morning, exercise participants were asked to leave behind their game roles as advisers to governors. They were now to take advantage of their own personal experience, their own perspectives, and whatever they might have learned so far in the exercise to make recommendations for near-term federal policy on workforce education and training. Specifically, teams prepared briefings for the U.S. secretaries of education and labor and delivered the briefings to the final plenary session at midday.

## 4. EXERCISE OUTCOMES

In this chapter we reproduce each participant group's output from the two seminar game moves and the exercise's final task. We do so without comment, reserving summary and interpretation for the next chapter. Teams were identified by the states they represented and a color: Algonquin Green, Algonquin Yellow, Montoya Blue, Montoya Red.

**MOVE 1 ALLOCATIONS**

The following tables give the move 1 allocations by each of the panels, along with comparative data. The first data column in each table shows what portion (in percent) of the block grant had previously been allocated to the programs subsumed under it. This allocation serves as a baseline against which the panels' allocation can be compared. The "unallocated" portion is the amount of the total represented by the funding increment.

The middle columns in Table 4.1 show the allocations by the Algonquin Green and Yellow panels. The Montoya panel allocations (and the comparison columns) are given in separate tables because the Red team combined categories in making its allocations.

The final column in each table gives the combined federal and state *categorical* funding for the various programs. These are funds *not* subsumed by the block grant and thus provide a different sort of comparative baseline, one that shows a level of funding that panelists might have expected to continue for certain programs regardless of what they did. For comparative purposes, they are shown as a percentage of the block grant total.

The allocations themselves represent only part of the panels' output for Move 1. All panels took some pains to precede or accompany the numbers with assumptions, recommendations, or an analysis of problems and strategies that they had undertaken as a prelude to the allocation itself. Indeed, panels typically spent only a small portion of the move actually coming up with numbers.

**Table 4.1**

**Algonquin Allocations as Percentages of Block Grant Total**

| Category | Status Quo | Green | Yellow | Categorical |
|---|---|---|---|---|
| K-12 education | | | 63 | 781 |
| Community colleges | | | | 23 |
| Other postsecondary | | | | 198 |
| Pell-like grants | 37 | 37 | 37 | |
| Job training | 25 | 25 | | 1 |
| Perkins (secondary) | 4 | 4 | | |
| Perkins (postsecondary) | 1 | 1 | | |
| Adult education | 1 | 1 | | 1 |
| Welfare to work | | | | 2 |
| Tax credits/deductions | | | | |
| Other | | 32 | | |
| Unallocated | 32 | | | |

**Table 4.2**

**Montoya Blue Allocations as Percentages of Block Grant Total**

| Category | Status Quo | Blue | Categorical |
|---|---|---|---|
| K-12 education | | 22 | 515 |
| Community colleges | | 3 | 55 |
| Other postsecondary | | | 220 |
| Pell-like grants | 37 | 25 | |
| Job training | 24 | 24 | 2 |
| Perkins (secondary) | 1 | 10 | |
| Perkins (postsecondary) | 2 | 3 | |
| Adult education | 1 | 1 | 24 |
| Welfare to work | | | 3 |
| Tax credits/deductions | | | |
| Standards | | 7 | |
| Collaboration | | 3 | |
| Unallocated | 35 | | |

**Table 4.3**

**Montoya Allocations as Percentages of Block Grant Total, Condensed Categories**

| Category | Status Quo | Blue | Red | Categorical |
|---|---|---|---|---|
| K-12, community colleges, and Perkins | 3 | 39 | 21 | 570 |
| Other postsecondary | | | | 220 |
| Pell-like grants | 37 | 25 | 37 | |
| Job training, adult ed, and welfare to work | 25 | 25 | 42 | 28 |
| Tax credits/deductions | | | | |
| Other | | 10 | | |
| Unallocated | 35 | | | |

It is clear from the tables that the panels saw the solution to the problem with which they were faced, if not the problem itself, quite differently. The Algonquin Yellow panel felt a need to react to cross-district K-12 funding inequalities and failing inner-city school systems in Algonquin. As a result, it put not only the "windfall" increment but also all federal funding previously devoted to the "second-chance" system into K-12. This shift also represented skepticism about the wisdom of programs like Perkins, JTPA, and adult education in which the money flows to institutions instead of individuals. Not incidentally, the new money for K-12 was to be accompanied by provisions for choice among schools, with funding following the student. Other design recommendations included the establishment of performance contracts for all schools and development of performance indicators for students to get them to take a more academically rigorous curriculum.

The other Algonquin panel took the most conservative approach, holding harmless all previous programs and treating only the funding increment as discretionary. Like the Yellow panel, the Green panel sought more charters and choice within the K-12 system but focused most of its attention on those at the middle school to adult levels. This panel wanted to award the entire $250 million funding increment competitively to partnerships of education providers, firms, and community-based organizations whose proposed strategies show the most promise toward assisting those most in need, e.g., welfare recipients.

Some of this disparity in emphasis between early and later education also manifested itself in the differences between the Montoya panels. Both sought to address the state's immigration-derived English literacy problems. However, the Blue panel put most of its funding increment into the K-12 system and effectively shifted funds from Pell grants to secondary-level (if more vocationally related) Perkins grants. It kept job-training, adult education, and welfare-to-work funding at previous levels. The Red panel, on the other hand, divided the increment about half and half between activities carried on principally by the K-14 system on behalf of young people and the programs serving principally adults.

These differences in allocative emphasis mask a consensus in strategic emphasis, however. Besides agreeing on the need to confront the literacy problem, both teams sought to establish standards and fund collaborative efforts. The Blue panel funded these as line items, while the Red panel specified that the funding it was directing to the K-14 system was to implement such strategies. The funding it directed to later education was specifically to create a structure to match clients to employers (and to enhance literacy).

Finally, even in the allocations themselves, there was a consensus across all four panels on three items:

- A program like the federal Pell grants was provided, in three cases at the same level of funding as the Pell program.
- Outside of that, none of the block grant money was to go to education in four-year colleges and universities.
- None of the block grant money was to go to tax deductions or credits for higher-education expenses. This is interesting, as this option was mentioned in materials provided to the panels and as it is now drawing considerable publicity and support in proposed federal legislation.

**MOVE 2 DESIGNS**

As implied by the preceding discussion, all panels began system design in Move 1. They reasoned from challenges to strategies that addressed those challenges, and only then to allocations, or they attached system design provisions to the allocations. What we report here then is really a combination of design-related panel outputs from Moves 1 and 2.

Table 4.4 summarizes the approaches recommended by each panel to redesign its state's education and training system. Tables 4.5 and 4.6 give a bit more detail. There, we break system design into seven elements and indicate the manner and extent to which each is incorporated in the four designs.

**Table 4.4**

**Summary Approaches to Education and Training System Redesign**

| Algonquin Green | Algonquin Yellow |
|---|---|
| Training accounts funding progress of workers through certification and continuing ed; multistakeholder state board for ed, training, & lifelong learning; set-asides for teacher development | Lifelong-learning paradigm with K-10 core, two years of additional free ed & training w/i next 5 yrs, adult retraining options; school performance indicators, individual standards |
| **Montoya Blue** | **Montoya Red** |
| Standards-driven system; administration of standards is allied with means to coordinate education and training and improve teacher capacity | Emphasizes standards, performance, and accountability, including willingness for corrective action; adult ed & training cofunded with industry |

The Algonquin Green panel again emphasized changes to the "second-chance" system, with a clear orientation to the needs of workers and employers. This panel seems to have been more optimistic than the others about the efficacy of reforming vocational education and training per se. It does not appear to have shared the view implicit in at least some degree in all the other designs that real reform should begin with the K-12 system. The Green panel's design concept focused on individual accounts for incumbent workers and others that could be tapped for training leading to a sequence of certifications. Coordination of academic and vocational education would be achieved by putting both under a single state authority.

The Algonquin Yellow panel's system redesign is based on the beliefs that the needs of individuals diverge before they finish high school and that postsecondary education and training might be needed at intervals over a worker's life. The result was a revolutionary concept in which the K-12 system is replaced by a K-10 system. "Grades" 11 and 12 could be taken at any time within the next five years and could entail quite divergent curricula, offered by diverse institutions, with the choice depending on the individual's ambitions. These provisions embodied and supported a lifelong-learning paradigm that broke down both the distinction between an individual's school and work careers and

**Table 4.5**

**Algonquin Education and Training System Redesign Elements**

| Provision | Green Panel | Yellow Panel |
|---|---|---|
| Standards and certification | Little emphasis on K-12; certificates may replace degrees as qualifications | Important adjunct to paradigm; to be developed with help from business |
| Institutional accountability | Not emphasized | Apply performance indicators to all schools; more money to successful ones |
| Coordination | Independent state board in charge of K-12, higher ed, and tech systems | Paradigm largely eliminates distinctions btwn ed & training |
| Exit and reentry, lifelong learning | Same state board also in charge of lifelong learning | Central to paradigm |
| Teacher development | High priority; institutions receiving funds must set aside some percentage for prof development | Retrain teachers for applied, integrated, work-based learning; abolish B.A. teacher ed; new grad-level core curriculum |
| Alternative pedagogies | Work-based education viewed as important | Not explictly emphasized |
| Funding training | Individual accounts for postcompulsory ed & training, e.g., for incumbent workers; link to certification & continuing ed | After grade 10, two years of ed & training funded within next five calendar years |

between academic and vocational education. (The Green panel also emphasized the importance of lifelong learning, though they did not reinvent the system to implement it.)

As in Move 1, the Montoya panels fell between the Algonquin extremes. Both came up with systems characterized by the need for individuals to meet standards both academically and in workplace skills attained. The Red panel's attraction to standards was a bit more thorough-going. It also advocated high-stakes assessments of achievement, along with teacher development to support those

**Table 4.6**

**Montoya Education and Training System Redesign Elements**

| Provision | Blue Panel | Red Panel |
|---|---|---|
| Standards and certification | Central to system; commission to advocate K-12 standards & industry-specific occupational standards | Academic standards and occupational competencies are prime system emphasis; high-stakes assessments |
| Institutional accountability | Not emphasized | Performance standards (esp. community colleges) for placement; funding tied to sucsess; willingness for state corrective acts |
| Coordination | Workforce & industry board with oversight of economic development, workforce skills, ed reforms, career development | Education policy to be tied to economic development |
| Exit and reentry, lifelong learning | Not emphasized | Viewed maybe necessary for applied learning |
| Teacher development | State Dept of Ed to improve capacity thru enhanced teacher prep & prof development and thru alternative pedagogies | To high standards aligned with high-stakes assessments; state to provide some funding |
| Alternative pedagogies | Linked academic & occupational ed, work-based ed, applied learning, team-teaching seen as ways to improve teacher capacity | Applied learning (work-, project-, service-based), including at least K-12, possibly K-16 or lifelong |
| Funding training | Not addressed | Basic ed & training free; tech & advanced thru grants or loans covering 50% of costs, industry to fund rest |

assessments, and accountability for institutions. The panel wanted the state to have the power to take corrective action when institutions, teachers, or students failed to meet standards.

The Blue panel also sought greater use of standards and greater efforts expended on professional development for teachers. However,

that panel also emphasized the need for greater coordination between educational reforms and the skills needed in the workplace as the economy evolves.

In designing their systems, the panels went well beyond the menu of design elements they were given to prioritize. The panels did incorporate such elements as standards and certifications, greater system coherence from the individual's perspective, and various pedagogies such as applied teaching, team-teaching, work-based education, and integrated academic and occupational education. But the panels strove to express internally consistent visions that substantially modified these elements by placing them within a broader perspective, and about half the design elements identified by the panels were not in the materials given them.

It is also interesting that the principal differences among panels only partially reflected the differences between the states whose problems they were attempting to solve. The two most disparate solutions (Green and Yellow) came from the same state. It is possible, though, that Algonquin's K-12 system, less problematic on average than Montoya's, allowed these panels the luxury of considering variant solutions. Meanwhile, the Montoya panels, faced with a poorly performing K-12 system, may have felt more compelled to focus on standards to motivate its upgrade.

Some of the differences between panels, however, appeared on the basis of observation to arise from differences in the perspectives put forward. As mentioned in Chapter 2, an attempt was made to ensure a variety of perspectives on each panel. Still, persons with a given background differed across panels in the extent and intensity of their participation.

**FEDERAL POLICY RECOMMENDATIONS**

Recommendations from the exercise's "Back from the Future" session are given in Tables 4.7 and 4.8. The recommendations are grouped by issue, following the design elements in Tables 4.5 and 4.6. As the panels generally took care to specify whether the federal government

should provide funding or simply play a leadership role in promoting certain activities, the nature of the federal involvement is indicated

**Table 4.7**

**Green- and Yellow-Panel Recommendations for Near-Term Federal Policy**

| Issue | Green Panel | Yellow Panel |
|---|---|---|
| Standards and certification | 0 Establish voluntary industry & academic standards, including high-school graduation credential based on high standards<br>$ Incorporate standards and certificates into national system of labor market and post-secondary-ed info | No federal role in standards per se, but see insitutional accountability, below |
| Institutional accountability | No federal role | 0 Work with states to ensure mastery of academic content, equity of achievement, and low dropout rates |
| Coordination | B Encourage participation by econ development agencies in state & local coordination of ed, training, & private efforts<br>0 Include Dept of Commerce in human resource initiatives involving Depts of Ed and Labor | 0 Work with states to ensure successful articulation between levels and continuous improvement of program takers<br>$ Study four-year post-secondary system to match practices with new demands |
| Exit and reentry, lifelong learning | See training, below | See training, below |
| Teacher development | No federal role | No federal role |
| Alternative pedagogies | No federal role | No federal role |
| Funding training | $ Establish accounts for adult lifelong learning funded from fed & state sources & individuals' earnings | $ Fund activities supporting training that permits long-term skill development (not training itself) |

B = bully pulpit, persuasion; 0 = no- or low-cost action;
$ = some federal money required

**Table 4.8**

**Blue- and Red-Panel Recommendations for Near-Term Federal Policy**

| Issue | Blue Panel | Red Panel |
|---|---|---|
| Standards and certification | **B** Acknowledge many students will not meet high K-12 standards; endorse standards-driven adult-education credential<br>**0** Reconstitute academic-standards board to coordinate with National Skill Standards Board<br>**$** Invest in high-quality assessments, esp. performance-based ones | **$** Encourage standards- and competency-based instruction |
| Institutional accountability | No federal role | No federal role |
| Coordination | **0** Continue Perkins legislative mandate; reauthorize school-to-work legislation to emphasize state-level system-building<br>**$** Retain venture capital strategy; support R&D to identify & disseminate effective workforce development models | **0** Recruit key constituencies at national, state, local levels; frame issues, promote dialogue at local and state levels<br>**$** Help align workforce agencies with legislation, encourage local partnerships |
| Exit and reentry, lifelong learning | No federal role | No federal role |
| Teacher development | No federal role | **$** Help align and consolidate teacher prep activities |
| Alternative pedagogies | **B** Promote contextualized learning | **$** Encourage new methods of instruction |
| Funding training | No federal role | No federal role |

B = bully pulpit, persuasion; 0 = no- or low-cost action;
$ = some federal money required

with a bold character: B, for use of the bully pulpit; 0, for actions involving little or no cost to the federal government; $, for actions involving funding, typically in the form of strategic investments rather than large new programs.

On the whole, the panels were relatively cautious in invoking federal power. Of the 28 panel x issue cells, 10 involved no federal role at all. In particular, most of the panels saw no federal role in ensuring institutional accountability or in the professional development of teachers. On the other hand, all panels recommended some federal role in the establishment of standards and certification and in coordinating the efforts of various agencies and institutions involved in education and training. But of the 18 cells in which some federal involvement is recommended, 8 involve no more than negligible levels of federal funds.

Recall that the panels were to leave their state identifications behind in this portion of the exercise. Nonetheless, there was considerable continuity between the design philosophies motivating the outcomes of the seminar game and the actions each panel recommended the federal government take.

The Green panel called for perhaps the most activist federal role. The panel believed the federal government should play a role in developing and sustaining a national lifelong-learning and human-resource infrastructure for a high-wage, high-skill economy. In particular, panelists called for federal involvement in establishing (voluntary) standards and an information system that could help match individuals having certain credentials or certificates and opportunities in colleges and the job market. They also sought federal participation in establishing the individual training accounts they recommended in Move 2 of the game.

The Yellow panel, on the other hand, did not seek near-term implementation of its reinvented education and training system from Move 2. On the contrary, it settled for a low-key near-term federal role, one characterized by collaborative efforts with states and at most a supporting role for federal dollars.

Enthusiasm for standards (and assessments) again led the Blue panel's menu of desired actions. The panel viewed standards-driven educational reform and workforce development as important elements in "regional workforce investment systems" consisting of school-to-work and training strategies connecting academic institutions, the workplace, and

a better economic future. The panel also saw a coordinative role for the federal government in establishing incentives for integration at local and state levels. Finally, the Blue panel felt officials such as the Secretary of Education could use the "bully pulpit" to instill an appreciation for the tough job schools have and the long-term nature of the challenge they face. The Secretary might also prepare schools and parents for the likelihood that many students will not meet higher standards at first.

The Red panel also saw the need for a federal "bully pulpit" in framing issues, promoting dialogue, and recruiting key constituencies. It restricted its claim on federal funds to a set of strategic investments in varied areas ranging from encouragement of standards-based instruction to consolidation of teacher preparation activities.

## 5. SYNTHESIS OF THEMES

In this chapter, we review the issues raised in Chapter 4 along with some others, drawing more heavily on the various discussions--in the dialogue sessions, in the substantive sessions preceding formulation of positions, and in the concluding plenary session. Here, we are less interested in the diversity of philosophies we reported in Chapter 4 and more in views the several panels shared and in combining variously expressed viewpoints into a coherent perspective. The reader should thus keep two important caveats in mind for this chapter:

1. This discussion represents views expressed during the exercise and not necessarily those of the authors of this paper or of the exercise sponsors. For ease of reading, we omit phrases like "some panelists thought that," "several spoke in favor of," and "it was suggested that," though every paragraph could be so conditioned.
2. The perspectives summarized in the following pages were each expressed by at least one person during the exercise, and we have taken only minor elaborative liberties in weaving them into a coherent characterization of the issues. However, this chapter does not represent a consensus position to which the participants have subscribed. In particular, *it would not be appropriate to associate any of the views stated with any given participant*.

We divide this discussion into thematic categories, but of course, there is considerable overlap among them. We conclude with an afterword in which we discuss the position of some of the themes in the policy debate as it stands today.

### PURPOSE AND PLACE OF EDUCATION IN THE NEW ECONOMY

As discussed in Chapter 1, the changing economy is characterized by greater international competition and greater market opportunities, a

perceived need for workers with different kinds of skills, unequal distribution of talent and wages, a more fluid employment environment, and other factors. These changes represent new challenges for the U.S. education and training system.

Education must prepare prospective workers for an environment in which new kinds of jobs--and, for that matter, many old kinds--require new skills, e.g., more widespread computer usage. It must do this at the same time that many high-school graduates have not acquired basic tenth-grade skills. Yet those who wish to get education to meet this challenge must overcome the resistance of a large number of educators who do not believe education's importance lies in preparing people for work. (In fact, without pressure from outside, there might well be no job-oriented training in high school.)

But the economic challenge of increasing worker skill levels across demographic groups is just one of those faced by education, which must also prepare Americans for their roles as citizens, consumers, and family members. Fortunately, the requirements of these various roles are not dissimilar. If people receive the kind of education required for high-skill jobs, they will also have the preparation needed for college. Furthermore, free exercise of civil rights and civic responsibilities requires a degree of economic self-suffiency, so education undertaken to achieve the latter facilitates the former.

But if the new economy is the principal motivator of the current drive for improved education, why not just leave it to business to supply the increment in quality? A good deal of learning needed for a particular job is already done in the workplace, leading to the question, "What is school for?" The workplace needs a set of skills, attitudes, and values that are very difficult to inculcate in individuals if they do not come to the job with them. Businesses expect schools to provide kids with basic skills in math, science, reading, communication, and technology. They expect prospective workers to come to them skilled as individuals and as members of a team. They expect these individuals to have acquired the ability to solve problems, the values and education entailed in what's required to be good citizens, and basic habits like getting to work on time. And, though many

employers do invest heavily in on-the-job training, the workplace cannot be relied upon to produce the type of broadly applicable and flexible education and edification that will generate responsible, productive citizens in a responsive economy. The workplace, after all, has to respond to short-term pressures of its own, and it can't do so if it must also provide a liberal education.

The evolving workplace actually needs skills at more than just a high-school level, but there is an advantage to the employer, the individual, and society if the time required to achieve these skills can be condensed. Business does not necessarily want to wait until kids get a four-year college degree to hire them. (That such a degree is required to succeed is more a notion parents hold than employers, who are more concerned with what prospective workers can *do*.) This suggests a requirement for college-level education in high school (which some schools are now providing) and some contact with business during the high-school years.

In considering what purposes education should fulfill, we are not just indulging in a philosophical debate but a debate over outcomes. We want to know what measures to use to decide whether reforms are successful. These measures might be civic, social, and educational as well as economic. To date, educational measures (grades, test scores, degrees attained) have dominated.

**FIRST-CHANCE VS. SECOND-CHANCE**

If limited resources force a choice between improving the "first-chance" K-12 system and the "second-chance" system of adult education or training and welfare-to-work programs, the K-12 system should win out It makes more sense to do the first-chance system right and forget the second. We will always be struggling to catch up through the second if the first isn't good enough, and if the first is good enough, the second might not be needed as much.

Therefore, to the extent that additional education and training funds become available, it might be wise to direct a substantial portion toward the K-12 system. Doing so requires recognizing that creating a better-skilled workforce might not necessarily be more effectively

achieved by enhancing the adult-level programs that are more explicitly oriented towards it. At the same time, however, simply pouring more money into the K-12 system, which is failing in a number of cities, will not solve its problems. In the remaining sections of this chapter, we discuss some further strategies for improvement.

While considering a choice between first- and second-chance systems usefully brings to mind the importance of the K-12 system in the new economy, such a choice does not really have to be made. That is fortunate, because abandoning the second-chance system would mean abandoning many clients who, having been failed by the first-chance system, need it to succeed. Typically, these clients are economically disadvantaged. And, as welfare limits take effect, welfare-to-work programs will become more important. There should also be a payback to children in the first-chance system from helping their parents with literacy and basic skills.

However, the outcomes from second-chance programs like those under JTPA have not been very good--not surprising, since these programs are sometimes too schoolhouse- or book-oriented and not sufficiently related to job skills. Training provided by employers to similar populations has had a somewhat better, though hardly unmixed, record of success.

There is also substantial political resistance to school-to-work programs and others with similar goals because they are seen as favoring underachievers. If such programs are to get the kind of broad support they need to succeed, they must serve a broader clientele. There must be, for example, a component oriented to the school-to-work needs of the top quartile of students, an "honors" component, as it were.

Well-designed programs might result from a competition among providers. Competitive grants might initially be awarded on the basis of creativity and likelihood to succeed and then renewed on the basis of outcomes. A premium could be placed on getting institutions to work together as partners in the grant applications. However, one might expect "haves" to be more creative in coming up with new solutions that "have nots," so some compensatory program (perhaps like Pell grants to college students) would have to be maintained.

In awarding grants, an effort should be made to serve the disadvantaged while avoiding the failures of previous programs with a broad "at risk" clientele. There needs to be a way to target individuals who are more likely or more willing to succeed. Given that, a premium should also be placed on capacity-building by institutions willing to hire previous welfare recipients and try to retain them.

To the extent both first- and second-chance systems are to remain in existence, they need integration. This is further discussed below.

**STANDARDS, CERTIFICATION, AND INSTITUTIONAL ACCOUNTABILITY**

There is too much inequality in the schools--some have good teachers and good programs, others, inadequate teachers. Various reasons have been advanced for this inequality, e.g., decentralization of funding and governance. Causes aside, schools' and teachers' expectations for many students are often very low. In too many states, for example, there are high-school graduates who can't read. And even if students don't manage to meet expectations, there isn't a bottom-line consequence for the schools or teachers. The result is that colleges and businesses don't necessarily believe the A's students get in many high schools. Parents in disadvantaged districts are particularly shortchanged, because an A in their district may not represent the same level of achievement as an A in a suburban district. However, they may not realize that until their child takes the SAT.

One answer to these problems is to hold schools accountable for meeting certain performance measures, for showing progress from year to year. What should the performance indicators be? Obviously, current input measures such as dollars expended per student are not good proxies for performance. More meaningful measures include attendance rate, dropout rate, and number of students taking a rigorous curriculum. A more valid output measure, though, could be scores on statewide assessments. The validity of such scores as indicators of meaningful achievement would depend on how carefully the assessments are designed; those based on task performance are generally thought to be the most valid. If the primary concern, though, is to achieve favorable economic

outcomes, school performance might also include measures of job market success (or college placement).

Regardless of what indicators are chosen, there must be a consequence for failing to meet performance goals. In systems where parents are allowed to choose among schools, an underperforming school can lose its clientele and go out of business. Where choice is not permitted or where there are no alternatives at acceptable cost to parents, the state should be empowered to take corrective measures, which might include assuming control over the school. This is not to say that the state should micromanage a school's attempt to meet performance expectations--only that there will be a consequence if the plan devised by the school does not pay off.

It may also be possible to set up incentives in addition to disincentives. If some districts or schools can be shown to have better-than-average placement records (normalized for differences in inputs), they may be allowed a greater share of the tax funds generated from those placements.

High-school standards need not be restricted to some body of knowledge everyone must know when they graduate. There could be a progression of academic-skill levels to be attained, and everyone could be required to graduate with competency in some discipline (for those going on to college) or some job-relevant topic or skill. But whether it is the last credential earned in high school or the only one, the high-school diploma should be regarded as an initial certification in a system of recurrent training and lifelong learning (see discussion below). It should truly be a commencement, a link between the academic and vocational systems.

On the vocational side, the United States is already moving toward workplace skill standards and certification of standards attainment. Skill standards are being developed within various industries and are likely to become widespread over the next five years. It is unclear, however, whether these developing standards will evolve into a coherent system, even within industries; the incentives may not be there. This may be a place where states or the federal government could take a leadership role while not imposing an outcome. The need for somehow

institutionalizing the development of standards becomes apparent when we consider that this is not a one-shot effort. Standards development would have to be ongoing to keep abreast of changes in technologies and in skills required. There needs to be continuous input to the development of vocational *and academic* standards from employers who see the needs for various skills evolving before their eyes.

Among its other advantages, a system of academic standards and assessment would counter inflated high-school grades. The latter are not likely to change unless many people within the system rebel against them. And what parent (or teacher) is going to volunteer his or her children (or students) as the first to be graded more rigorously? Attaining a widely recognized academic standard would also give a new worker a truly meaningfuly bargaining chip to take into the job market--something equivalent to the endorsement from teachers or schools required for job placement in some foreign countries.

Standards are not a panacea, of course. They cannot provide an incentive to students who still do not see a connection between schoolwork and the "outside" world. Various alternative pedagogies may be of help (see "Teacher Training and Development," below).

And, in any system, there is the potential for abuse. Here it may come in the form of falsified certificates. This suggests the need for some authorizing entity working on a statewide or higher basis with whom an employer could check. It also suggests some sort of system for tracking individual progress, e.g., a system in which an individual builds a portfolio over the course of a career.

**LIFELONG LEARNING**

Career portfolios, of course, are one facet of lifelong learning. In a lifelong-learning system, persons might get a progression of certifications along a career ladder in a given discipline or skill area. At a minimum, people's skill levels would be judged throughout their lifetimes on the basis of their having trained to certain standards at various points in their careers. Such standards would then form the basis of a pay-for-skills system. Persons would reenter and exit the education and training system as they saw the need for more.

Just as education would infiltrate the working years, so would career considerations come up in the years of compulsory education. One objective of the K-6 years might be to make children aware of the variety of career options they have, so that they might undertake more directed learning in what are now the high-school years. In recognition that education and training needs can diverge before students finish high school, the core curriculum might end short of 12th grade by as much as two years.

There are two ways of looking at this, with quite different implications for the resources to be devoted to the K-12 system. In one, K-12 is the foundation and becomes the focus for most of the near-term funding. In the other, the extension of learning to cover a lifetime results in a relative decrease in K-12's importance.

There would usually be a benefit both to individuals and to society from their staying on a given career track. However, as the economy evolves and individuals grow, persons will want to make career changes. So within each track there will be a need to recognize training equivalents from other tracks. Skills may have to be defined in building-block elements, but however they are defined and whoever does it, it will be better to do it before a massive demand for it arises.

Lifelong learning would require that individuals invest in updating their skills from time to time. But they might get a leg up if the funds the state decided to invest in postsecondary education could be more flexibly applied--and if postsecodary education could be more broadly understood to include training in workplace skills. The state's share of an individual's lifetime education expenses could be put into an account and perhaps augmented to match contributions from business and from the individual. He or she could draw from the account to support progress along some sequence of certifications (each of which would require continuing education to keep it current). The recipient would have to complete some compulsory curriculum that it is agreed all should take, but, generally speaking, he or she would be funded to meet some sort of job qualification standard, not to get a degree.

A lifelong-learning system cannot be implemented precipitately, if only because the state must continue to serve those who have gone

through high school in the current system. Some kind of voucher system might be implemented as a first step in the direction of individual training accounts. More emphasis might also be placed on funding training to upgrade the skill of incumbent workers instead of only that which attempts to provide skills to the unskilled.

**TEACHER TRAINING AND DEVELOPMENT**

Neither a standards-based system nor lifelong learning will be achieved successfully without reorienting teachers to these new system designs and, in particular, preparing them to teach so that students will attain standards. Alternative pedagogies may help improve teacher capacity as well as student achievement. Teachers might be required, for example, to master skills they need to promote contextualized learning if they want to be recertified. Of course, a characteristic shared by pedagogies characterized as "alternative" is that their effectiveness has not been proven yet. Teacher education curriculums must thus temper enthusiasm for new, promising approaches with caution and must be responsive to the latest research findings. It may also be that teachers themselves should spend time in the workplace so they can better understand what will be expected of their students. And, naturally, this all applies to those who teach teachers as well. More broadly, state agencies distributing education and training funds should perhaps require that all receiving agencies spend some percentage on professional development (not development of the old kind, but of the kind just indicated above).

To be consistent, there should be a performance-based certification system for teachers, through which they would have to become periodically recertified to receive pay increases. That is, teachers would have to be certified to teach, and teachers in vocational programs would also need the certificate toward which their students were working. Such certification would only mean something if out-of-field teaching were prohibited.

One element of such a certification system might be a requirement that all teachers get a graduate education degree. With such a requirement, it might make more sense to have prospective teachers spend

their undergraduate years becoming expert in the topics they intend to teach. There might then not be a further need for undergraduate teaching programs. And if teaching were professionalized and if schools were held accountable for results, there wouldn't be as much of a need for teacher unions or the tenure system. What *would* be required is a way to remove incompetent teachers.

**COORDINATION**

Clearly, a truly integrated academic-and-vocational education-and-training system would have manifold advantages. It would promote vocational education and training from the second-class "second-chance" system to the first-chance system, according workforce development the priority it deserves in the new economy. It would lend more "real world" purpose to academic education and possibly motivate more high-school students to realize their potential. It would also motivate employers to shift the qualifications they desire to more meaningful job-specific certifications from the generic college degree that many of them now rely on. (And it would arrest the ratcheting up of academic qualifications and schooling attained that is occurring in sectors with a labor surplus and that wastes society's resources procuring a college education for people who do not need it.)

Reforms of the type suggested above would require coordination among organizations involved in education and training that are used to acting separately, even defending turf against others. Coordination is needed from level to level within academic and within vocational education, so some assurance can be had that individuals are making progress. It is needed between academic and vocational educators. And it is needed between educators and the workplace, where the jobs are.

One possible means of coordination is the establishment of regional workforce development boards responsible for linking labor information, workforce skills, educational reform, and economic development. But these boards cannot restrict themselves to establishing weak connections among independent actors or to creating a plethora of partnerships. There must be a multistakeholder, high-priority, collaborative effort to

bring about a seamless transition from school to work and vice-versa--to promote, in other words, lifelong learning.

A multistakeholder effort must not, of course, neglect the biggest and ultimately most powerful stakeholder of all--the public, including the parents of those who would most benefit. The public must "sign on," must understand what schools are trying to achieve as they evolve.

As already mentioned, because the workplace will continue to evolve, it will be a good idea to have the business community collaborating in the design and oversight of education and training programs. In fact, community college systems that have good relations with employers already do lots of training *for* those employers. Too often, business is brought in after the educators are finished to rubber stamp what has already been done.

Finally, we do not mean to give the impression that integration is a one-way street--that it will be sufficient for institutions now devoted to providing a liberal education to think more about careers. Professional education and training need to be "liberalized" to encourage critical thinking and inquiry on the job. It is that kind of thinking that will lead to greater productivity, not just the acquisition of various certificates.

A truly coordinated workforce development effort may turn out to be too much to expect of regional boards. It may require leadership at the state level, e.g., by an independent state board in charge of all education and training under a lifelong-learning rubric. Such a board might promulgate models for career guidance, define clear career ladders with identification of points at which training is needed, and provide information as to where skills are needed. In practicing this kind of coordination, states would be following in the footsteps of nations like Germany and Australia that already consolidate education and training.

**THE FEDERAL ROLE**

We have said little about the role of the federal government in any of the preceding because its role in education and training is controversial. Clearly, there are plenty of places the federal government can help out. It could help fund system-building at the

state level or capacity-building among employers willing to hire disadavantaged trainees, to name just two. But it seems unlikely that major new federal funding will be forthcoming outside of tax deductions or credits to be allowed for college expenses. And there are some constituencies that would prefer no federal role at all. What of those who believe that a nationwide commitment is required to ensure a competitive American workforce in the new economy and that such an effort should not exclude the federal government and may require its leadership? The most that it seems reasonable that they hope for is a strong federal coordinative role and high-profile use of the "bully pulpit."

Through the bully pulpit, federal officials might educate the public about a number of things: the greater challenge now faced by education because of the changing economy, the long-term nature of this challenge, the need for standards, the difficulty of teaching to new standards, and the need for new pedagogies. At a minimum, they could promote a national discourse on education--e.g., what the purpose should be, which level of government should do what--that could help raise the profile of the issue.

A federal coordinative role might include recruiting key stakeholders to the cause, setting up forums for dialogue and collaboration among players, and joining with whatever states wished to participate in a national standards-setting effort. This last would require some funding to match that committed by states, and the federal government may also have the wherewithal for small, strategic investments to support various of the other initiatives suggested in the preceding sections.

One way in which limited federal monies can exert great leverage is through research, particularly that addressing the problem of getting change to happen. The nation could benefit from reviewing what has become of various past initiatives--which have been successful and which not. For example, the School-to-Work Opportunities Act of 1994 envisioned a merger of education and labor interests, but that has not happened yet and the law is due to expire next year. Should the act be reauthorized, or should someting else be tried? If so, what and why?

Federal funds might also support the evaluation of various state-level initiatives.

The least the federal government can do is to order its own house. A joint policy for the Departments of Education and Labor with respect to every area discussed above is essential. Policies must support cooperation among stakeholders rather than permitting divided camps (e.g., vocational-education proponents vs. school-to-work enthusiasts); the aim should be to avoid competition for resources and encourage all parties to seek ways to gain the widest leverage possible off funds that are committed to anyone. Finally, if business is to play a central role in education and training reform in the states, the Department of Commerce should have a role to play at the federal level. Through a joint strategy among its own departments for coordination of state-level initiatives, the federal government might be able to build confidence within the private sector that things can be changed--and that may be as valuable a contribution as any large pot of money can make.

**AFTERWORD**

At the time of this writing (October 1997), many of the themes revealed through the policy planning exercise are much discussed in policy circles and in public forums. Others seem less pressing or at least capture less policy or media attention. It seems useful to end our discussion of themes with some thoughts about their status within the current debate.

A central theme from the planning exercise was the importance placed on standards, including content standards for school learning, industry standards, and, relatedly, standards assessment. Standards remain a controversial topic in American education. In the current debate on national standards and tests, for example, the President and Congress hold opposing positions. The administration's action plan to educate and prepare America for the 21st century explicitly commits to setting "rigorous national standards, with national tests." Over the summer, the federal government supported the development of specifications for such a test, and the President has used the bully pulpit to persuade the public of their importance. Even though the

national testing plan is voluntary, critics argue that the federal government should not promote such tests because a national standard threatens local control of schools. Primarily for that reason, federal legislators are seeking to block the test by refusing to appropriate funds for its development. Meanwhile, urban school officials reconsidered plans to administer the test once a decision was made to administer the reading portion only in English. The Secretary of Education has temporarily stopped work on the project, thus leaving the national testing issue at a stalemate.

Prior to the current testing debate, the policy discussion on national standards for academic subjects was also lengthy and often rancorous. Since first proposed under the Bush Administration, several national groups representing the various disciplines involved have developed voluntary standards and a few state governments have adopted statewide curriculum standards. In addition, the Departments of Education and Labor supported the development of voluntary skill standards in 22 industries. Although a national skill standard board oversees the skill standard initiative, a sister board for curriculum standards was abolished by the 104th Congress. At present, academic and industry standards continue to be developed in isolation of one another in spite of many obvious reasons for collaboration and coordination.

A second theme from the policy planning exercise was the call for more coordination between different components of the education and training system. Efforts to coordinate can be seen, for example, in the School-to-Work Opportunities Act, which mandates integration between work-based and school-based learning experiences. It can be seen in the growth of tech prep programs, which articulate high school with two- and four-year college programs to assist youth transition from school to career. It can also be seen in legislative efforts to streamline the patchwork of current programs for vocational education and job training. Coordination is certainly on the minds of U.S. Senators, who have recently proposed to consolidate vocational education, adult education, and job training programs and to link federal job training activities to other related programs through a "one-stop service system." The related House proposal calls for consolidation of job training and adult

programs, but the House voted to separately reauthorize vocational education. While federal legislators may agree that consolidation is important, they by no means agree on how to do it.

Participants in the policy planning exercise often discussed improvements to teacher education as a necessary ingredient for achieving other reform goals, such as standards-based assessment or lifelong learning. Their sentiments often echoed the bleak picture presented in a recent report from the National Commission on Teaching and America's Future. That report identified several problems with the teacher training and development system, including unenforced standards, major flaws in teacher preparation, slipshod recruitment, and lack of professional development and rewards for knowledge and skill. The report agreed with policy exercise participants that standards for teachers are as important as standards for students. Currently, the tests administered by the National Board for Professional Teaching Standards provide a start toward such standards. The Commission report also notes progress on other fronts, including new programs for recruiting and mentoring teachers or the growth of professional networks, but, much of the education and certification system remains with teacher-training institutions and individual states.

The issues just discussed and many others raised in the planning exercise deliberations often grappled with state versus federal roles and responsibilities. The organization of this exercise assumed the current climate in which federal dollars are increasingly dispersed in block grants to state governments where they can presumably be directed to better meet local conditions and needs. It is not surprising then that discussion about the federal role was largely limited to the bully pulpit, support of research, and coordination. At the same time, however, the tensions between the federal and state roles were far from absent. It can be difficult to argue simultaneously for national standards and block grants to states. A future policy exercise on education and the new economy could certainly take another tack and entertain an expanded federal role in support of a truly national system.

## 6. LESSONS FOR FUTURE POLICY EXERCISES

RAND-designed policy exercises typically conclude with a feedback session so that participants can identify aspects of the exercise design that could be improved. Exercises on a given topic are often rerun, informed by the feedback from earlier runs. And some recommendations from participants are applicable to the generic social-policy exercise protocol and can thus turn out to be useful even if the particular game generating them is not rerun.

Following are lessons inferred from the critique session of the current exercise and from observations of panels during the exercise. As implied above, whether they are adopted in future exercises will depend on whether an exercise much like the current one is run again, and, barring that, whether they are applicable. It also depends on whether they are feasible in terms of the analytic capability required and on what must be given up to implement them.

- Try to get more people from job-training programs and some people from youth service groups to attend. Participants were pleased that the business world was represented but felt that the balance between education and training organizations represented leaned too much to the former.
- Reverse the order of the first two questions structuring the dialogue session. The first question was intended to draw on participants' personal experiences with the education system and the workforce, but some felt it made more sense to start with the second question on the objectives of education. Generally speaking, facilitators and their panels varied widely in how they conducted the dialogue, with some adhering more closely to the structure that was offered than others.
- Use more strongly varying states, or classify the panels by level of government (federal, state, or local) instead of by state. The allocations and system designs that the panels came up with did not differ much by state. To some extent, that may

have reflected insufficient variation in the scenarios given for Algonquin, which was near the middle of the distribution on most educational measures, and Montoya, near the bottom.

- Reverse the order of Moves 1 and 2. Panels generally began their deliberations on allocating the funds available in Move 1 by attempting to reach consensus on overall education and training strategies required in their state. This ambitious activity, envisioned for Move 2, forced panels to squeeze the allocation itself into a brief period at the end of Move 1 and left some of them dealing largely with details in the time allocated to Move 2.
- Broaden the scope of the funds available for allocation in Move 1. Funds to be allocated excluded all current state expenditures and federal monies spent within the state on K-16 education (although Pell and Perkins funds were reallocable). Some panelists wanted more latitude to remake the system within their state through the Move 1 allocations. Appreciation was expressed, however, for the way in which the game design focused the panels on making tough choices.
- Provide more data or more time to work with the data available in Move 1. Panelists had to make allocative judgments regarding a wide variety of systems without potentially important detail on each--or without the time to draw potentially important inferences from the data that were provided. Panelists were sometimes left to conjecture based on real states that they thought the hypothetical ones were inteded to resemble.
- Clarify the presentation of data. Game designers wrestled with the tabular presentation of baseline data for the Move 1 allocations in response to a preliminary run of the game at RAND. The result was not entirely successful, as some panelists were still uncertain as to what was meant by columns intended to give baseline categorical, unallocable funds and baseline funds being combined into the block grant.

- Eliminate or redirect the Move 1 indicators. In allocating funds in Move 1, panelists were told future funding could depend on their state's performance on several indicators. Participants felt these were too oriented toward education, (e.g., how many diplomas or degrees are awarded), when that is only partially related to long-term economic success. By allocating to score well on such indicators, panelists felt they would fund a "credentialism" that does not have a whole lot to do with education's purpose. One panel decided, in fact, to ignore the indicators. The indicators could be more directly related to the economy, e.g., number of welfare recipients moving off welfare, number of welfare recipients getting and holding a job.
- Brief the panels on the allocation outcomes model ahead of Move 1, or make the model flexible enough to account for provisions attached to the allocations. Panelists felt they might have allocated funds differently had they known what were the assumptions tying their actions to outcomes on the various indicators. Furthermore, because the model could not take into account some strategies devised to address major problems within their state, e.g., concentrating funds in districts with special problems, the model outcomes were insufficiently relevant to the panels' actions.
- Allow outcomes from the model to be shared. Model outcomes were not briefed; instead, each panel received its outcomes (and only its outcomes) on hard copy. Panels could compare their outcomes with outcomes based on no change in allocations, which were provided, but not with any based on different allocations.
- Permit the panels to interact with the model, or at least permit a second model-based move Not only were other panels' outcomes not visibile, but each panel could make only one move; it could not try out several different allocations. More might be learned if the panels could interact directly with the model, trying different inputs to see how the outputs varied.

(It is worth noting that, although several recommendations dealt with the model, we were also urged not to place any more emphasis on it--that more could be learned from Move 2 than from an expansion of Move 1.)

## APPENDIX A

## EXERCISE MATERIALS

This appendix contains the four-part manual provided to exercise participants. Part A was handed out prior to the opening dialogue, Part B before Move 1 of the seminar game, Part C before Move 2, and Part D before the "Back from the Future" session. There were two versions of the manual, one with data specific to the hypothetical state of Algonquin and the other with data specific to Montoya. This is the Algonquin version.

# POLICY PLANNING EXERCISE: EDUCATION AND THE NEW ECONOMY

The Aspen Institute, Aspen Meadows

June 23–25, 1997

## Exercise Manual

### Part A

**NCRVE**

National Center for Research on Vocational Education

University of California, Berkeley

**RAND**

Santa Monica, California

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**This manual is an introduction to a planning exercise for exploring possible changes in education and training policy at the state and federal levels as the international and domestic economic environment changes. Additional information and materials will be made available to participants as the exercise is conducted.**

## 1. AGENDA

| Day & Time | Activity | Location |
|---|---|---|
| **Monday** | | |
| 6:00 p.m. | Dinner and welcoming | Reception Center |
| 7:30 | Dialogue: issues in education | Seminar Rooms |
| 9:00 | Adjourn | |
| **Tuesday** | | |
| 7:00 a.m. | Breakfast begins | Reception Center |
| 8:30 | Introduction to the seminar game | Lauder |
| 9:30 | Game Move 1: decisionmaking in 1998 at the state level | Seminar Rooms |
| 11:30 | Team presentations on Move 1 recommendations | Lauder |
| 12:30 p.m. | Lunch | Reception Center |
| 1:30 | Feedback on Move 1 | Lauder |
| 2:00 | Game Move 2: decisionmaking in 2002 at the state level | Seminar Rooms |
| 4:30 | Team presentations on Move 2 recommendations | Lauder |
| 5:30 | Adjourn | |
| 6:15 | Dinner | Reception Center |
| **Wednesday** | | |
| 7:00 a.m. | Breakfast begins | Reception Center |
| 8:30 | Introduction to final exercise | Lauder |
| 8:45 | Back from the Future: policy recommendations for 1997 at the federal level | Seminar Rooms |
| 10:45 | Presentations on 1997 recommendations | Lauder |
| 12:00 p.m. | Lunch | Reception Center |
| 1:00 | Concluding discussion | Lauder |
| 2:00 | Adjourn | |

## 2. OVERVIEW OF THE EXERCISE

### Purpose

This exercise is designed to help participants explore alternatives in public policy for education in the context of the new or emerging economy. Its purpose is not to provide solutions to problems but, rather, to provide insights and increased understanding, which may later prove useful in attempts to formulate or implement policy. In line with this, the exercise also has the goal of encouraging systemic thinking about academic and work-related education and training.

### Scope

The exercise provides a forum in which participants can share views on education and its relationship to social goals and economic prosperity. In particular, participants can discuss and formulate possible future policy positions and their implications in a seminar game in which they play the part of an advisory panel to the governor of their state. The exercise also provides participants the opportunity to make recommendations for federal policies currently being considered by Congress.

### Structure

About 40 people will participate in the exercise beginning in the evening of June 23 and ending after lunch on June 25. Participants, in their role as advisors to the governor, will be supported by facilitators and support personnel from RAND and the National Center for Research on Vocational Education. "Advisors" will be assigned to groups or "panels" of approximately eight people from varied backgrounds. A facilitator and a recorder will be assigned to each panel. Each "advisor" will remain on the same panel throughout the exercise.

The policy planning exercise consists of a series of group activities meant to help players think constructively about education and the new economy.

1. A small-group **dialogue** on views held by the advisors. It is meant to give people a chance to get to know one another, express their opinions or agendas, and gain a shared understanding of a range of differing views on the subject.

2. A two-move **seminar game** in which panels of advisors are asked to formulate policy recommendations for the Governor and Legislature of their respective states: first, to recommend near-term policies for implementing assumed federal workforce education and training legislation and, then, to recommend longer-term, more ambitious state policies. It is meant to help people work together in the simplified but concrete context of a game to consider workforce education policies.

3. A final activity bringing advisors **back from the future** of scenarios and seminar games to forge their recommendations for federal policy in 1997. Having "experienced" a possible future, they may now be better equipped to apply their real-world knowledge and experience to this task, which is meant both to provide players with insights and to furnish senior policy makers with a concise set of alternative policy recommendations from varied groups of knowledgable, experienced people.

A concluding discussion will be moderated by RAND and NCRVE staff.

## 3. DIALOGUE ON EDUCATION AND THE NEW ECONOMY

In the dialogue session, groups do not play roles; rather, individuals get to know one another better by expressing their views on each of three topics related to education and the economy. A staff member will actively facilitate these dialogue discussions. (See also the ground rules given below.)

This one-hour session deals with three topics pertaining to education and the new economy. Each group will spend 15 to 20 minutes discussing each question. There is no need to reach consensus among members of the group. The recorder will take notes on points of consensus and disagreement. These discussions should be useful background to the seminar game that follows and points made here may be recalled by exercise staff in the concluding discussion on Wednesday.

### a. What do you see as the relationships among education, work, and the economy?

This topic gives you opportunity to reflect on and share your personal experiences, stories, and perspectives. Since personal experiences often shape our ideas and beliefs, this lays a foundation for subsequent discussion.

Some issues you might choose to address:

1. How well did your education prepare you for the work you are doing or have done? What was superfluous? What was missing?

2. How important is it that education prepare people for work? Is it more important to educate people for citizenship? Or to rise to the level of their potential?

3. How is the economic picture changing? Is education responsive?

4. What is the connection between education for work and for citizenship in a civilized culture?

### b. What are the objectives of education for individuals and for the nation as a whole?

Before attempting to diagnose the problems with education or prescribe any cures, we should consider the objectives we may be seeking. Although it is not always necessary for everyone to agree on them, it can be helpful to understand the range of objectives an individual or group of people may have.

Here we present some possible objectives for discussion. The list is not exhaustive, and some of the views may overlap. With which do you agree? Or disagree? Are other objectives important to you?

1. The objective of education and training is to make the country economically competitive and prosperous.

2. The objective is to reduce poverty and socio-economic inequalities.

3. The objective is to provide the kind of education and training best suited to individual differences, so that all people have opportunity to realize their potential.

4. The goal of education is social efficiency. Uneducated people are wasted resources.

5. The goal of education is social mobility. This produces continual renewal of society.

6. The goal of education is to make democracy work. Democracy requires an educated and informed citizenry.

7. The goal of education is to maximize individuals' contribution to society, the nation, and the world.

**c. What are the main challenges facing education in America today with respect to how the economy is changing?**

Again, here are some possible challenges for discussion. Agreements? Disagreements? Other possibilities?

1. It leaves too many people behind, relegating them to unemployment or underemployment.

2. Vocational education is largely focused on helping people *get* jobs rather than *hold* jobs or advance over time.

3. Vocational education is too often poorly designed, taught, and equipped.

4. Education is insufficiently responsive to changing and uncertain future skill demands.

5. Academic and job-related education are poorly integrated—to the detriment of both.

6. For those most in need, high school education does not sufficiently engage young people to help them achieve either academic or vocational pursuits.

7. Basically, the system works well; there's not much wrong with it.

**Ground Rules for Useful Dialogue:**

- Each group member should briefly introduce himself or herself, stating why there're here and what they're expecting.
- The role of the facilitator is to guide discussion of each topic according to the ground rules and to see to it that the group gets its job done.
- All group members should be encouraged to express and reflect on their honest opinions; all views should be respected.
- It is important to hear everyone. People who tend to speak a lot in groups should make special efforts to allow others the opportunity to speak.
- Though disagreement and conflict about ideas can be useful, disagreements should not be personalized. There should be no put-downs, name-calling, labeling, or personal attacks.

## 4. SEMINAR GAME ON EDUCATION AND THE NEW ECONOMY

### Simulating Future Decisions at the State Level

A seminar game is a role-playing exercise in which teams or panels of players (in this game called "advisors") meet in seminars to discuss policy issues they have been asked to address and to decide on policy recommendations. This game consists of two moves, each assumed to take place at a specified point in game time. During each move participants are informed by staff of the current situation and the policy issues they are being asked to address. They then meet as separate panels to discuss the issues and formulate recommendations. After that, a plenary session is held for the panels briefly to present their recommendations. Finally, the staff estimates the effects of panel recommendations and other factors on the situation at some future date.

The scenario assumptions consist of data on the nation and state that may be useful to the panels, as well as information on the current political and economic situation. These are meant to be accepted by participants as plausible simplifications of reality. Participants are not asked to view the future situation as a valid prediction but, rather, as one plausible way the future might unfold. They are then asked to make policy recommendations in that future context.

During the seminar game, each group plays the role of a panel of senior advisors appointed by the governor of their state, charged with advising the governor on matters related to workforce education and training. For game purposes, two states with different characteristics are represented: "Montoya" and "Algonquin."

Each panel will hold two meetings of approximately two hours duration to deliberate their policy recommendations. The first meeting will focus on recommendations for the State's 1998 budget; the second meeting will be set four years in the future. For these sessions, each panel will select a leader from among its members. The leader will chair the meetings and will subsequently present the panel's recommendations in plenary session. In these sessions, facilitators will act as resource people.

In Move 2, players will be presented with a situation that has evolved over the previous four years, partially in response to their recommendations in Move 1, which they may assume to have been implemented. Of course, we cannot make an accurate, confident prediction. The projection will be informed by data and by what is known about cause and effect, but the knowledge base is insufficient to permit rigorous analysis or simulation modeling, and we shall not claim the projection to be "true" in any sense. We shall ask players to simply accept the situation presented to them in Move 2 as plausible.

Each panel is given 15 minutes to present its recommendations, and we shall encourage panel leaders to stick to that limit.

## BACKGROUND ON ALGONQUIN

Algonquin is a large Midwestern state with an economy that has been hurt by the decline of the manufacturing sector but that is now basically stable. Outmigration to other states keeps Algonquin's population growth rate to about 6 percent per decade. Eleven percent of the population (and 18 percent of the K-12 enrollment) is minority—about half the rate for the nation as a whole.

The state's unemployment rate has recently been running below the national average by 1.5 to 2 percentage points. Population below the poverty line is typical of that of the nation as a whole, as is the percentage on AFDC and SSI.

The state government has in recent years ranked around 36th in revenue per capita, and its debt outstanding per capita is about two-thirds the national average across state. The state currently ranks 12th in K-12 expenditures per pupil, though that position is likely to erode given current spending trends. Funding varies widely from district to district, giving rise to criticisms that indicators of average education success hide under-achievement by large numbers of children.

In 1992, eighth-graders ranked 22nd out of 41 participating states in math achievement, according to the NAEP, although, as with funding, achievement results varied widely across districts. The state ranks 20th (out of 38 for which data are available) in the percentage of students taking upper-level math courses. The dropout rate among 16- to 19-year-olds at 9 percent is below the national average (11 percent), though the Algonquin population as a whole is less well educated than that in the rest of the country (61 percent with no college vs. 55 percent). Eighth-grade NAEP ranking in math was 18th in 1992. Teacher quality, as measured by various requirements, standards, funding provisions, and qualifications, is about average relative to the rest of the country. The state is a little below average in such indicators of school climate as class size, local autonomy, and student safety.

**Secondary level.** Algonquin's State Board of Education confers approval on policy decisions, exerting a great deal of influence through program approval, evaluation, and performance reporting mechanisms. The state has developed content standards for two core subjects, but students need not meet statewide standards for high-school graduation except for passing a 9th-grade-level test.

General education funding follows a foundation program based on pupil units per ADM (average daily membership, which equates roughly to enrollment). (Under a foundation program the state guarantees each district a specified minimum amount of revenue per pupil (the foundation level) at a stipulated tax rate. A district's aid is the difference between the foundation level and the per-pupil revenue the district raises at that stipulated tax rate.) Funding has some restrictions, as it is limited to specific programs and to specific target groups.

Algonquin has about 750 comprehensive high schools and 25 vocational high schools providing secondary vocational education. In addition, 61 area vocational technical centers and 9 correctional institutions provide vocational education and training at the secondary level. Algonquin has a state director of vocational education with direct authority over the secondary and postsecondary vocational programs and a more complete program approval process.

Total vocational education funding is about $328 million for classroom units, adult programs, career education and equipment. Contributions are dispersed as follows: 43.9 percent local, 49.5 percent state, and 6.6 percent federal. About two-thirds of Perkins funds are allocated to secondary vocational education.

**Postsecondary level.** In Algonquin, postsecondary vocational education is available at 10 community colleges, 13 technical institutes or colleges, 49 area vocational technical centers, and at 30 regional campuses. The State Board of Education (for nondegree programs) and the Board of Regents (for degree programs) have governing responsibility over postsecondary programs. The Board of Education sets the general policy direction, is responsible for program review and approval, and sets standards. It has significant influence over funds allocation and program content, but allows for local adaptation to state criteria.

Algonquin uses formula-cost based funding: allocation of state funds is based on multiple cost centers, detailed instructional discipline categories, program functions, or budgeted object of expenditures. Funding is related to actual costs, which are assumed to vary with program and institutional factors. State funds can only be used for existing services and programs, not new programs. Funding contributions are as follows: 44 percent local; 50 percent state; 6 percent federal. About 33 percent of Perkins funds are allocated to postsecondary vocational education.

**JTPA**. JTPA funds are allocated through an RFP process to educational institutions and SDAs approved by the Private Industry Council. The state does not set funding priorities. Coordination goes beyond federal requirements and is encouraged through such means as incentive funds, model sites, and interagency task forces.

**Welfare to Work.** Algonquin's work program requires mandatory participation of welfare recipients with children over age 3. It provides education, training, child care, transportation and health benefits, at a cost of about $350 per fiscal year. About 55 percent of the funds are federal, 45 percent state, and less than 1 percent local. JOBS legislation increased contracts with local providers and intra-state agency involvement.

**State Approaches to Job Training for Economic Development.** Algonquin's industry training program targets manufacturing businesses and provides outreach to minority- and woman-owned firms. The program is administered by the state department of development, and offers both on-the-job and classroom training. Funds are by legislative appropriation, with a 1:1 matching requirement (firms pay 50 percent of training costs).

Firms apply for funds through a proposal process to local districts. LEAs serve as fiscal agents. In 1989, Algonquin spent 11 million dollars on its training program.

**Summary Data.** Following tables give the number of participants in various programs in 1997, a variety of education and training success indicators for that year, and the educational attainment distribution for the state, with average earnings for each level attained.

| Program | Participants (1997) |
|---|---|
| High school | 519,001 |
| 2-year college | 164,213 |
| 4-year college | 307,053 |
| Adult basic | 88,302 |
| Adult secondary | 20,451 |
| Job training | 77,600 |
| Public assistance | 210,094 |

| Success Indicator | Value (1997) |
|---|---|
| Number receiving | |
| Secondary diploma or GED | 110,217 |
| Postsecondary or advanced training | 27,554 |
| Associate degree | 20,117 |
| Bachelor's or higher degree | 71,352 |
| Number placed in jobs after training | 54,320 |
| Percent employed | 95.20 |
| Per capita earnings | $20,475 |

| Educational Attainment | Percent of Population | Average Earnings |
|---|---|---|
| Less than high school grad | 24.3 | $8,023 |
| High school graduate only | 36.3 | $17,057 |
| Some college, no degree | 17.0 | $20,579 |
| Associate degree | 5.3 | $27,702 |
| Bachelor's degree or better | 17.1 | $43,082 |

Algonquin

# POLICY PLANNING EXERCISE: EDUCATION AND THE NEW ECONOMY

Aspen, Colorado

June 23–25, 1997

## Exercise Manual

### Part B

**NCRVE**

National Center for Research on Vocational Education

Berkeley, California

**RAND**

Santa Monica, California

## 4. SEMINAR GAME ON EDUCATION AND THE NEW ECONOMY

**First Move:**
**Decisions in 1998: Instructions to Advisory Panels**

*Situation*

Today is January 10, 1998.

Congress has passed the Education, Employment, Training, and Literacy Enhancement Act of 1997, which, among other requirements, establishes a block grant to provide

- up to two years of postsecondary education or training,
- adult employment and training,
- disadvantaged youth training, and
- adult education and literacy enhancement.

The postsecondary funding was a compromise between Congress and the President, who had originally wanted funds earmarked to guarantee two years of college to qualified applicants. States must decide how much of the block grant funds should go to school-to-career reforms, community college opportunities, vocational education, and other worthy educational or job training programs.

The state and the local workforce development boards must set goals they intend to achieve with block grant funds for each of the following program client indicators:

- Number receiving a high school diploma.
- Number finding and holding a job.
- Average earnings.
- Number attaining industry-recognized job skills.
- Number independent from welfare.
- Number attaining literacy and numerical skills, including level of literacy deemed necessary for "productive and responsible" citizenship.
- Number placed in and and completing postsecondary-education and job-training programs.

States' ability to reach performance benchmarks can affect future federal funding levels.

The task for panels in their first move is to decide how to allocate the block grant for adult and vocational education and training, given the goals represented by the benchmarks.

*How to Proceed*

1. You will have a total of an hour and 45 minutes to deliberate and reach decisions.

2. Keep in mind that you are in the role of a panel of senior advisors to the Governor and Legislature of the State of Algonquin.

3. At the beginning of the move you will be given approximately ten minutes to quickly read through

   - these instructions and

   - a draft memo for the Governor prepared by the panel staff.

4. As soon as it is practical, the leader of the panel will ask each member to comment briefly on the draft memo. The leader will then chair an orderly discussion of points raised in the draft memo. This discussion may include whether or how the allocation might be reframed, what options might be added or deleted, or how text should be reworded. You may find helpful the state and national data and state program descriptions attached at the end of this manual.

5. You should then attempt to reach consensus on an allocation to be recommended to the Governor. If a consensus cannot be reached, vote to progressively eliminate positions with the least support. Record the final vote on the master copy of the draft memo. The leader or a designated member must maintain this master copy of the draft memo on which is recorded any rewording, additions or deletions, and recommendations.

6. After deliberations, the panel leader will be asked to summarize and explain the panel's final decisions and recommendations. The leader may refer to the master copy of the draft memo for making this presentation. The leader will give the master copy to the facilitator after the presentation.

**MEMORANDUM FOR THE GOVERNOR OF ALGONQUIN**

*Draft memo prepared by the Staff, for review and revision by the Panel.*

January 1, 1998

FROM: The Algonquin State Panel on Education and the New Economy

SUBJECT: **Recommendations on Allocating Federal Block Grant Funds for Adult and Vocational Education and Training**

We have reviewed recently enacted block grant Federal legislation in light of the situation and environment in the State. The following table shows

- state and federal funds committed for expenditure within Algonquin on specified educational and training programs in FY98 (first data column),
- federal funds previously dedicated to various categories that are now being combined into the new block grant (second column), and
- percentage breakdown for the latter, excluding unallocated (third column).

| Program | State & fed. categorical ($M) | Block grant | | |
|---|---|---|---|---|
| | | Avail. to allocate ($M) | Status quo allocation | Panel's allocation |
| K-12 education | 6,030 | | | % |
| Community colleges | 174 | | | % |
| Other postsecondary | 1,528 | | | % |
| Pell-like grants | | 288 | 54.8% | % |
| Job training | 11 | 194 | 36.9% | % |
| Perkins basic grant | | | | |
| Secondary | | 29 | 5.5% | % |
| Postsecondary | | 6 | 1.1% | % |
| Adult education | 57 | 9 | 1.7% | % |
| Welfare to work | 16 | | | % |
| Other/Unallocated | | 247 | | % |
| Total | 7,816 | 773 | 100.0% | 100% |

The state is now free to allocate the $773 million block grant total among educational and training purposes as it sees fit. We note that the portion of the block grant labeled "unallocated" was originally intended (and publicized) by the President to fund college tuition tax credits and deductions.

Our ability to continue receiving elevated levels of federal funding will depend on our achieving certain performance benchmarks in education, employment, earnings, welfare dependency, literacy, and numerical ability among those we serve.

With those goals in mind, we recommend the federal monies to be received this year be allocated to adult and vocational education and training programs as shown in the last column of the table.

Our reasons for the allocation shown are as follows:

# POLICY PLANNING EXERCISE: EDUCATION AND THE NEW ECONOMY

Aspen, Colorado

June 23–25, 1997

## Exercise Manual

### Part C

**NCRVE**

National Center for Research on Vocational Education

Berkeley, California

**RAND**

Santa Monica, California

## 4. SEMINAR GAME ON EDUCATION AND THE NEW ECONOMY (cont.)

**Second Move:**
**Decisions in 2002: Instructions to Advisory Panels**

*Situation*

Today is February 5, 2002.

The accompanying data sheet shows changes over the last four years in program participation, various diplomas received, employment, earnings, and educational attainment of the workforce. It may be of significance that, around this time, the five-year limit on welfare benefits that was passed in 1996 will be coming into effect for some people.

The Governor has been reelected on a platform calling for systemic reform of education, to better prepare all citizens for the world of work and to further strengthen the state's position in a learning-intensive economy. The Governor has identified several long-term objectives of this reform:

- Create a coherent system of high quality, relevant workforce education and training that serves the needs of all people, regardless of whether their formal education ends with high school, includes college or technical postsecondary education, or includes retraining to meet the demands of a changing economy.
- Train and sustain the highly skilled workforce necessary to support a vibrant and prosperous state economy, benefiting all its citizens.
- Meet the special needs of those who are disabled, receiving welfare benefits, in correctional facilities, and others.

The Governor has also set out two near-term objectives:

- Comply with all provisions of federal legislation.
- Protect public and private service providers, as well as service recipients, from excessive, revolutionary shocks to the system that would do more harm than good.

The task for panels in their second deliberative meeting is to make broad recommendations to the Governor and Legislature on design of the education and training system. The draft issue paper provided to panels by their staff lists the major issues to be addressed and some of the recommendations the team might make. Teams are then free to reframe the issues, refine the discussion, and select from or augment the recommendations.

*How to Proceed*

Proceed according to the instructions for the previous move, except that in this case, the goal is to specify approaches to transforming the current set of education and training programs into a coherent system. You should begin with a discussion of the pros and cons of various possible approaches, with the goal of reaching a consensus as to which approaches would be advisable to take.

The Governor would also like your advice on how to choose between the approaches judged advisable if resources don't permit adopting them all. Rank the approaches according to four general priority categories (see attached draft issue paper).

Among the approaches you might consider are the following, which you may take to have been previously identified by a separate task force:

**Vocational skill training** of varying length, to prepare individuals for jobs of different levels of skill, responsibility, earnings, and stability.

**Academic instruction, integrated with occupational education.** In job training programs, this could refer to remedial instruction, which proves to be necessary for many individuals.

**Inclusion of work-based education**, coordinated with classroom-based instruction, through "connecting activities." Work-based learning can provide a different kind of learning, complementary with classroom instruction.

The **connection of every program to the next in a hierarchy** of education and training opportunities. Some high school programs are explicity linked to post-secondary opportunities through tech prep. The analogy in job training programs is to connect every program to a further program at a higher skill level.

**Use of applied teaching methods and team-teaching strategies**. All school-based and work-based programs should incorporate pedagogies that are more contextualized, more integreated, student-centered, active, and project- or activity-based.

**A method for tracking individuals' progress** through the system.

**A set of standards and certifications** associated with program completion that signify progress toward higher skill levels.

**ISSUE PAPER FOR THE GOVERNOR**

*Draft issue paper prepared by the Staff, for review and revision by the Panel.*

February 1, 2002

FROM: The State Panel on Education and the New Economy

SUBJECT: **Designing an Education and Training System: Issues and Recommendations**

In what follows, we present our understanding of the major issues for the state in the coming fiscal year, together with our recommendations for resolving them.

*System Design Issues*

Federal legislation aims to encourage states to design and implement workforce education and career development as a *system*. Part of public education *is* a system: kindergarten leads through a sequence of grades with each a prerequisite for the next, and on to higher education; this is the "schooling system." However, the existing set of job-related programs was constructed apart from the schooling system. That made more sense when the schooling system could generally be regarded as the "normal" or "first chance" system, and job training could be viewed as a "second chance" opportunity offered to those who couldn't make it through normal education. Nowadays, the situation is different:

- The schooling system is faulted for insufficiently preparing many of its *graduates* for the world of work.
- The average worker can expect to have to change jobs or even fields one or more times during his or her working lifetime.
- Continual learning is an increasingly important part of work itself.

As a result, demand is mounting for a systems approach to encompass both academic and work-related education and training. A unified system has the potential of being more effective—particularly for those who find themselves in short-term job training programs with small and short-lived payoffs.

At issue in the near term is what measures should be taked to create an education and training *system* for the state, as opposed to a collection of programs.

*System Design Approaches*

You have asked us to review approaches proposed by your Task Force on Creating an Education and Training System in light of the current situation and our previous recommendations regarding funding priorities. Below, we check off those approaches that we believe would contribute to a coherent, integrated education and training system.

__ Vocational skill training of varying length and for different skill levels.

__ Academic instruction, integrated with occupational education.

__ Inclusion of work-based education.

__ The connection of every program to the next in a hierarchy.

__ Use of applied teaching methods and team-teaching strategies.

__ A method for tracking individuals' progress.

__ A set of standards and certifications.

__ Additional approaches:

__ _____

__ _____

__ _____

__ _____

Our reasons for omitting previously suggested approaches and our reasons for including additional ones are as follows.

*Prioritizing the Approaches*

We recognize that limited state resources may not permit funding all approaches that could be of value. Therefore, in the following list, we rank the approaches on the following scale:

A Must do in the near future if the Governor's goals are to be achieved.

B Of substantial help in achieving the Governor's goals

C Could be of some help in achieving the goals

D Not recommended

__ Vocational skill training of varying length and for different skill levels.

__ Academic instruction, integrated with occupational education.

__ Inclusion of work-based education.

__ The connection of every program to the next in a hierarchy.

__ Use of applied teaching methods and team-teaching strategies.

__ A method for tracking individuals' progress.

__ A set of standards and certifications.

__ Additional approaches:

__ _____

__ _____

__ _____

__ _____

Our reasons ranking some of these approaches above others are as follows:

Algonquin

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## 5. BACK FROM THE FUTURE

Panels return to 1997. Based on their experience in Moves 1 and 2, as well as their real-life experience, each team is now asked to prepare a 10-minute briefing on near-term policy recommendations for workforce education and training for the Secretaries of Education and Labor.

In contrast to the deliberations in the seminar game, we shall not provide teams with a staff issue paper or any other structure. You are simply to frame and present the recommendations as you think best. (Here, you are not role-playing.) Deliberations will be chaired by the team leaders, with facilitators acting as resource people.

As was the case with the two seminar game moves, the "Back to the Future" exercise will be followed by a plenary session in which each Team Leader will briefly present his or her team's recommendations.

The exercise will then conclude with a discussion of insights gained from the exercise and possible next steps.

## APPENDIX B
## THE ALLOCATION OUTCOMES MODEL

This spreadsheet model is designed to accept as inputs budget allocation team decisions from Move 1 in the Policy Exercise on Education and the New Economy and to produce plausible feedback for teams as they begin Move 2 deliberations, four years ahead in game time. Feedback includes program participation rates, indicators of student success, and workforce distribution by educational attainment--all at the state level.

The spreadsheet consists of four tables, the first of which is allocation of funds. The first column is budget items, beginning with K-12 Education. The second column gives State and Federal Categorial allocations, which cannot be changed. The third column gives block grant funding available for the Panel to allocate. The Federal formula for determining the size of the block grant is posited to be based on previous year's categorical grants being replaced by the block grant; the amount of block grant funding due to prior categorical grants is shown in the third column, plus additional Other/Unallocated funding. The fourth column shows the percentage allocation of the total block grant if the State were to do a status quo allocation--that is, as though the entire block grant, including the Other/Unallocated augmentation, were to be allocated in the same proportions as Federal funding was made available under the previous year's categorical funding. The fifth column is for the Panel's allocation of the block grant, in percentages.

The other tables--program participation, indicators of student success, and workforce distribution by educational attainment--each have Base, Projected, and Achieved columns. Base is current base, as of Move 1 game time. Projected is the estimate for four years hence, calculated from Status Quo assumptions. Achieved is the outcome four years hence, calculated from Panel's Allocation.

The model's plausibility depends both on the reasonableness of the Base data and the logic linking allocations to the Projected and Actual estimates.

**DATA**

The Base data were prepared for two states: California (called Montoya in the game) and Ohio (called Algonquin in the game). Where available, the most recent state-specific data were used.

**Participation**

**High School Participation.** Base high school participation is from the Digest of Educational Statistics 1996 (DES) Table 39, which gives public school enrollment by state for grades 9-12, as of fall 1994.

**2-Year and 4-Year College Participation.** Base college participation is from DES Table 194, which gives public and private two-year and four-year college enrollment by state, as of 1994.

**Adult Basic Education Participation.** Base adult basic and secondary participation is from DES Table 352, which gives enrollment by state, as of 1991.

**Job Training Participation.** Base value calculated as job training funding divided by an assumed cost of $2,500 per student.

**Post-Training Placement Participation.** Base value calculated as an assumed 70% of job training.

**Public Assistance Participation.** Montoya data are for adults on AFDC plus able-bodied adults without dependents on public assistance, according to the California Budget Project. Algonquin data are for "groups" on ADC public assistance as of September 1996, according to the ODHS Office of Research and Andersen Consulting Analysis.

**Success Indicators**

**Secondary Diploma or GED.** Base data are from DES Table 99, which gives public high school graduates by state, as of 1995-1996.

**Postsecondary/Advanced Training Completion.** Base value calculated as an assumed 25% of secondary diploma or GED base value.

**Associate Degree and ≥ Bachelor Degree.** Earned degrees are from DES Table 240, as of 1993-1994.

**Employed**

Base employment figures are based on 1996 unemployment rates for California and Ohio of 7.2% and 4.8%, respectively.

**Avenage Earnings**

Calculated from earnings by educational attainment and workforce composition.

**WORKFORCE**

**Workforce Composition by Educational Attainment**

DES Table 11 gives educational attainment of persons 25 and older by state for 1990. The base workforce composition is assumed to be the same.

**Earnings by Educational Attainment**

Census Bureau national earnings by educational attainment for 1993 are as follows:

| Educational Attainment | Earnings |
|---|---|
| Less than high school grad | $6,096 |
| High school graduate only | $12,960 |
| Some college, no degree | $15,636 |
| Associate degree | $21,048 |
| ≥ Bachelor's degree | $32,733 |

By assuming that Montoya's per capita earnings by educational attainment are 1.28135 times the national mean, we get a base per capita earnings figure of $22,035, which matches the California personal income per capita for 1995 in 1992 dollars.

By assuming that Algonquin's per capita earnings by educational attainment are 1.31615 times the national mean, we get a base per capita earnings figure of $20,475, which matches the Ohio personal income per capita for 1995 in 1992 dollars.[1]

**LOGIC**

In general, allocation of discretionary Federal funding affects program participation which, in turn, affects success indicators. The success indicators representing educational attainment affect the proportions of workforce by educational attainment which, in turn, affect per capita earnings, one of the success indicators. Employed, a

[1] Algonquin's higher earnings factor yields a lower per capita earnings figure because Montoya has a better educated workforce.

success indicator, is affected by job training and Post-Training Placement program participation.

The logic assumed in these relationships is presented below in a series of tables. In all cases, change is expressed as a percentage.

**Allocation Effects on Program Participation**

| **K-12 Education** | |
|---|---|
| Program Participation | Posited Relationship |
| High School | 5% times change in allocation |
| 2-Year College | 2% times change in allocation |
| 4-Year College | 2% times change in allocation |
| Post-Training Placement | |
| Adult Basic | |
| Adult Secondary | |
| Job Training | |
| Public Assistance | -2% times change in allocation |
| Secondary Diploma or GED | 3% times change in allocation |

| **Community Colleges** | |
|---|---|
| Program Participation | Posited Relationship |
| High School | |
| 2-Year College | 25% times change in allocation |
| 4-Year College | |
| Post-Training Placement | |
| Adult Basic | |
| Adult Secondary | |
| Job Training | |
| Public Assistance | |

| **Other Postsecondary** | |
|---|---|
| Program Participation | Posited Relationship |
| High School | |
| 2-Year College | |
| 4-Year College | 2.5% times change in allocation |
| Post-Training Placement | |
| Adult Basic | |
| Adult Secondary | |
| Job Training | |
| Public Assistance | |

**Pell-Like Grants**

| Program Participation | Posited Relationship |
|---|---|
| High School | |
| 2-Year College | 20% times change in allocation |
| 4-Year College | 25% times change in allocation |
| Post-Training Placement | |
| Adult Basic | |
| Adult Secondary | |
| Job Training | |
| Public Assistance | |

**Job Training**

| Program Participation | Posited Relationship |
|---|---|
| High School | |
| 2-Year College | |
| 4-Year College | |
| Post-Training Placement | 20% times change in allocation |
| Adult Basic | |
| Adult Secondary | |
| Job Training | 25% times change in allocation |
| Public Assistance | |

**Secondary (Perkins)**

| Program Participation | Posited Relationship |
|---|---|
| High School | 1% times change in allocation |
| 2-Year College | 1% times change in allocation |
| 4-Year College | |
| Post-Training Placement | |
| Adult Basic | |
| Adult Secondary | Proportional to change in allocation |
| Job Training | |
| Public Assistance | |
| Secondary Diploma or GED | 3% times change in allocation |

Secondary Voc-Ed is assumed to affect participation in Adult Secondary and Secondary Diploma or GED.

**Postsecondary (Perkins)**

| Program Participation | Posited Relationship |
|---|---|
| High School | |
| 2-Year College | 20% times change in allocation |
| 4-Year College | |
| Post-Training Placement | |
| Adult Basic | |
| Adult Secondary | |
| Job Training | |
| Public Assistance | |

**Adult Education**

| Program Participation | Posited Relationship |
|---|---|
| High School | |
| 2-Year College | |
| 4-Year College | |
| Post-Training Placement | 15% times change in allocation |
| Adult Basic | 20% times change in allocation |
| Adult Secondary | 20% times change in allocation |
| Job Training | |
| Public Assistance | |

**Welfare to Work**

| Program Participation | Posited Relationship |
|---|---|
| High School | |
| 2-Year College | |
| 4-Year College | |
| Post-Training Placement | 10% times change in allocation |
| Adult Basic | |
| Adult Secondary | |
| Job Training | 25% times change in allocation |
| Public Assistance | -25% times change in allocation |

**Tax Credits or Deductions**

| Program Participation | Posited Relationship |
|---|---|
| High School | |
| 2-Year College | 15% times change in allocation |
| 4-Year College | 20% times change in allocation |
| Post-Training Placement | |
| Adult Basic | |
| Adult Secondary | |
| Job Training | |
| Public Assistance | |

**Other**

| Program Participation | Posited Relationship |
|---|---|

"Other" and its impacts were not predefined. Where used and defined by a panel, we attempted to specify logic and calculate impacts ad hoc.

**Program Participation Effects on Success Indicators**

| **High School** | |
|---|---|
| Success Indicator | Posited Relationship |
| Secondary diploma or GED | 50% times % change in participation |
| Postsecondary/advanced training | 20% times % change in participation |
| Associate degree | 20% times % change in participation |
| ≥ Bachelor's degree | 20% times % change in participation |
| Employed | 1% times % change in participation |
| Per capita earnings | Not directly related |

| **2-Year College** | |
|---|---|
| Success Indicator | Posited Relationship |
| Secondary diploma or GED | |
| Postsecondary/advanced training | 50% times % change in participation |
| Associate degree | 25% times % change in participation |
| ≥ Bachelor's degree | 20% times % change in participation |
| Employed | 1% times % change in participation |
| Per capita earnings | Not directly related |

| **4-Year College** | |
|---|---|
| Success Indicator | Posited Relationship |
| Secondary diploma or GED | |
| Postsecondary/advanced training | |
| Associate degree | |
| ≥ Bachelor's degree | 20% times % change in participation |
| Employed | 1% times % change in participation |
| Per capita earnings | Not directly related |

| **Post-Training Placement** | |
|---|---|
| Success Indicator | Posited Relationship |
| Secondary diploma or GED | |
| Postsecondary/advanced training | |
| Associate degree | |
| ≥ Bachelor's degree | |
| Employed | 5% times % change in participation |
| Per capita earnings | Not directly related |

**Adult Basic**

| Success Indicator | Posited Relationship |
|---|---|
| Secondary diploma or GED | 10% times % change in participation |
| Postsecondary/advanced training | 10% times % change in participation |
| Associate degree | 10% times % change in participation |
| ≥ Bachelor's degree | 2% times % change in participation |
| Employed | 1% times % change in participation |
| Per capita earnings | Not directly related |

**Adult Secondary**

| Success Indicator | Posited Relationship |
|---|---|
| Secondary diploma or GED | 20% times % change in participation |
| Postsecondary/advanced training | 15% times % change in participation |
| Associate degree | 10% times % change in participation |
| ≥ Bachelor's degree | 5% times % change in participation |
| Employed | 1% times % change in participation |
| Per capita earnings | Not directly related |

**Job Training**

| Success Indicator | Posited Relationship |
|---|---|
| Secondary diploma or GED | |
| Postsecondary/advanced training | 50% times % change in participation |
| Associate degree | 5% times % change in participation |
| ≥ Bachelor's degree | |
| Employed | 1% times % change in participation |
| Per capita earnings | Not directly related |

**Public Assistance**

| Success Indicator | Posited Relationship |
|---|---|
| Secondary diploma or GED | -10% times % change in participation |
| Postsecondary/advanced training | |
| Associate degree | |
| ≥ Bachelor's degree | |
| Employed | -50% times % change in participation |
| Per capita earnings | Not directly related |

**Success Indicator Effects on Workforce Composition**

These changes are calculated in the sequence shown, from top to bottom, such that the total always sums to 100% of the workforce.

| **≥ Bachelor's Degree** | |
|---|---|
| Educational Attainment | Posited Relationship |
| ≥ Bachelor's degree | Proportional to change |
| Associate degree | -50% of change in ≥ bachelor's degree |
| Some college, no degree | -50% of change in ≥ bachelor's degree |
| High school graduate only | |
| Less than high school grad | |

| **Associate Degree** | |
|---|---|
| Educational Attainment | Posited Relationship |
| ≥ Bachelor's degree | |
| Associate degree | Proportional to change |
| Some college, no degree | -50% of change in associate degree |
| High school graduate only | -50% of change in associate degree |
| Less than high school grad | |

| **Postsecondary or Advanced Training** | |
|---|---|
| Educational Attainment | Posited Relationship |
| ≥ Bachelor's degree | |
| Associate degree | |
| Some college, no degree | Proportional to change |
| High school graduate only | -75% of change in postsecondary or advanced training |
| Less than high school grad | -25% of change in postsecondary or advanced training |

| **Secondary Diploma or GED** | |
|---|---|
| Educational Attainment | Posited Relationship |
| ≥ Bachelor's degree | |
| Associate degree | |
| Some college, no degree | |
| High school graduate only | Proportional to change |
| Less than high school grad | -100% of change in secondary diploma or GED |

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | | | **Montoya Data** | | |
| 2 | | | | | |
| 3 | | State & Fed | | Block Grant | |
| 4 | | Categorical | Avail to Allocate | Status Quo | *Panel's* |
| 5 | | $M | $M | Allocation | *Allocation* |
| 6 | K-12 Education | $12,264 | | | |
| 7 | Community Colleges | $1,300 | | | |
| 8 | Other Postsecondary | $5,235 | | | |
| 9 | Pell-like Grants | | $ 874 | 56.1% | 56.1% |
| 10 | Job Training | $42 | $ 581 | 37.3% | 37.3% |
| 11 | Secondary (Perkins) | | $ 33 | 2.1% | 2.1% |
| 12 | Postsecondary (Perkins) | | $ 44 | 2.8% | 2.8% |
| 13 | Adult Education | $567 | $ 26 | 1.7% | 1.7% |
| 14 | Welfare to Work | $62 | | | |
| 15 | Tax Credits or Deductions | | | | |
| 16 | Other/Unallocated | | $ 823 | | |
| 17 | | $ 19,470 | $ 2,381 | 100% | 100% |
| 18 | | | $ 1,558 | | |
| 19 | | | | Program Participation | |
| 20 | Program | | Base | Projected | Achieved |
| 21 | High School | | 1,451,609 | 1,596,770 | 1,596,770 |
| 22 | 2-Year College | | 1,113,171 | 1,260,764 | 1,260,764 |
| 23 | 4-Year College | | 511,753 | 545,091 | 545,091 |
| 24 | Adult Basic | | 761,637 | 837,801 | 837,801 |
| 25 | Adult Secondary | | 260,946 | 287,041 | 287,041 |
| 26 | Job Training | | 249,200 | 274,120 | 274,120 |
| 27 | Public Assistance | | 930,188 | 1,023,207 | 1,023,207 |
| 28 | | | | | |
| 29 | | | | Indicators of Success | |
| 30 | Success Indicator | | Base | Projected | Achieved |
| 31 | Secondary Diploma/ GED | | 261,761 | 287,937 | 287,937 |
| 32 | Postsecondary/ Adv Tng | | 65,440 | 71,984 | 71,984 |
| 33 | Associate Degree | | 56,417 | 63,897 | 63,897 |
| 34 | ≥ Bachelor Degree | | 164,818 | 175,555 | 175,555 |
| 35 | Post-Tng Placement | | 174,440 | 191,884 | 191,884 |
| 36 | Employed | | 92.80% | 92.80% | 92.80% |
| 37 | Per Capita Earnings | | $ 22,035 | $ 22,035 | $ 22,035 |
| 38 | | | | | |
| 39 | | | | Workforce Composition by Educational Attainment | |
| 40 | Educational Attainment | Earnings | Base | Projected | Achieved |
| 41 | Less than high school grad | $ 7,811 | 23.8% | 23.8% | 23.8% |
| 42 | High school graduate only | $ 16,606 | 22.3% | 22.3% | 22.3% |
| 43 | Some college, no degree | $ 20,035 | 22.6% | 22.6% | 22.6% |
| 44 | Associate degree | $ 26,970 | 7.9% | 7.9% | 7.9% |
| 45 | ≥ Bachelor's degree | $ 41,942 | 23.4% | 23.4% | 23.4% |
| 46 | | | 100.0% | 100% | 100% |
| 47 | | | | | |

## Algonquin Data

| | State & Fed Categorical $M | Block Grant Avail to Allocate $M | Block Grant Status Quo Allocation | Block Grant *Panel's Allocation* |
|---|---|---|---|---|
| K-12 Education | $6,030 | | | 27.0% |
| Community Colleges | $174 | | | |
| Other Postsecondary | $1,528 | | | |
| Pell-like Grants | | $ 288 | 54.8% | |
| Job Training | $11 | $ 194 | 36.9% | 26.0% |
| Secondary (Perkins) | | $ 29 | 5.5% | 23.0% |
| Postsecondary (Perkins) | | $ 6 | 1.1% | 20.0% |
| Adult Education | $57 | $ 9 | 1.7% | 4.0% |
| Welfare to Work | $16 | | | |
| Tax Credits or Deductions | | | | |
| Other/Unallocated | | $ 247 | | |
| | $ 7,816 | $ 773 | 100% | 100% |
| | | $ 526 | | |

| Program | Program Participation Base | Projected | Achieved |
|---|---|---|---|
| High School | 519,001 | 570,901 | 579,607 |
| 2-Year College | 164,213 | 172,150 | 161,023 |
| 4-Year College | 307,053 | 307,984 | 305,432 |
| Adult Basic | 88,302 | 97,132 | 97,577 |
| Adult Secondary | 20,451 | 22,496 | 26,533 |
| Job Training | 82,000 | 90,200 | 87,746 |
| Public Assistance | 210,094 | 231,103 | 229,855 |

| Success Indicator | Indicators of Success Base | Projected | Achieved |
|---|---|---|---|
| Secondary Diploma/ GED | 110,217 | 112,421 | 118,926 |
| Postsecondary/ Adv Tng | 27,554 | 30,310 | 29,840 |
| Associate Degree | 20,117 | 21,089 | 21,172 |
| ≥ Bachelor Degree | 71,352 | 71,568 | 71,392 |
| Post-Tng Placement | 57,400 | 63,140 | 61,983 |
| Employed | 95.20% | 95.20% | 95.23% |
| Per Capita Earnings | $ 20,475 | $ 20,475 | $ 20,896 |

| Educational Attainment | Earnings | Workforce Composition by Educational Attainment Base | Projected | Achieved |
|---|---|---|---|---|
| Less than high school grad | $ 8,023 | 24.3% | 24.3% | 18.9% |
| High school graduate only | $ 17,057 | 36.3% | 36.3% | 43.1% |
| Some college, no degree | $ 20,579 | 17.0% | 17.0% | 15.4% |
| Associate degree | $ 27,702 | 5.3% | 5.3% | 5.8% |
| ≥ Bachelor's degree | $ 43,082 | 17.1% | 17.1% | 16.9% |
| | | 100.0% | 100% | 100% |